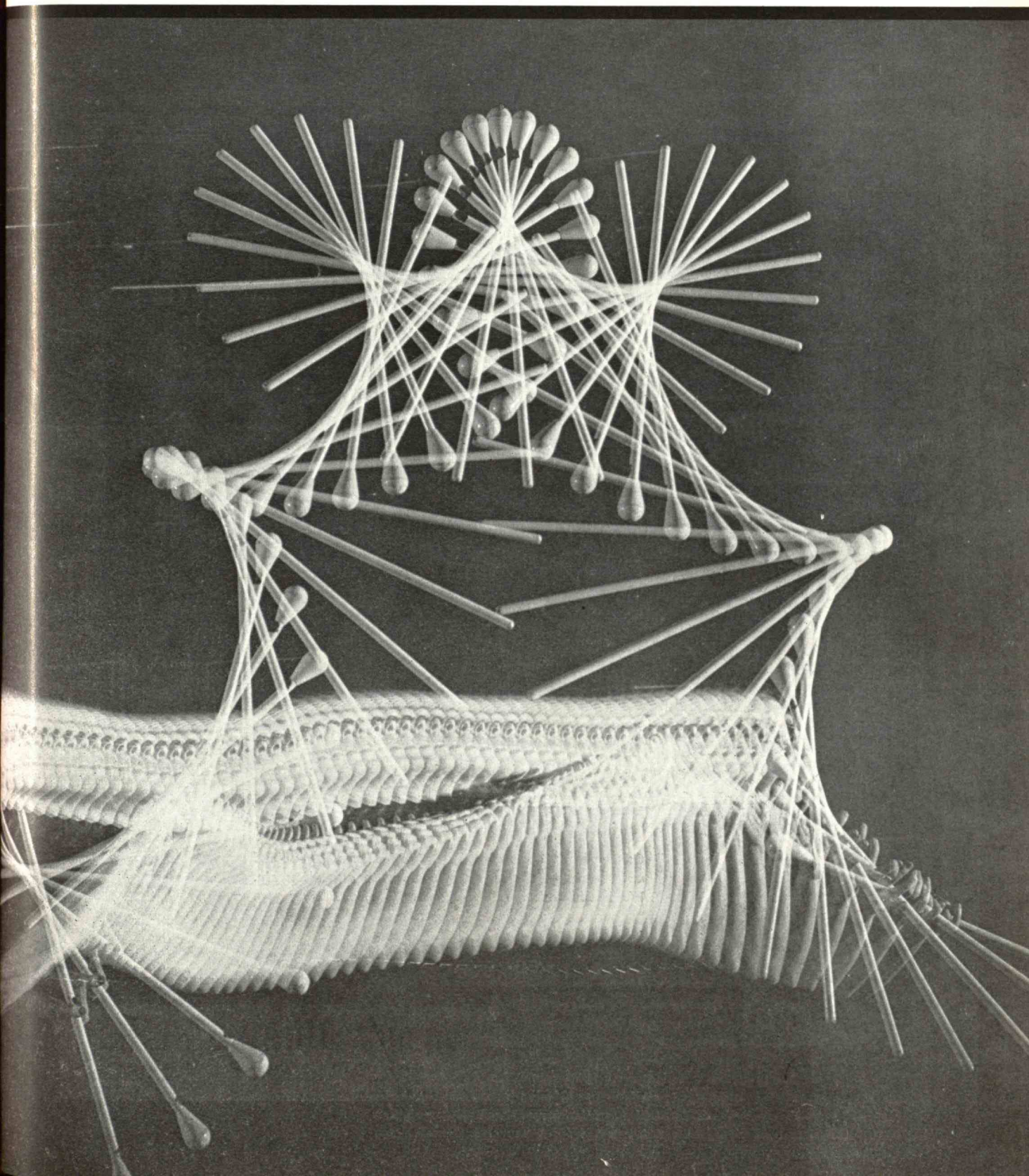
TECHNOLOGY
REVIEW April 1953



technology
review
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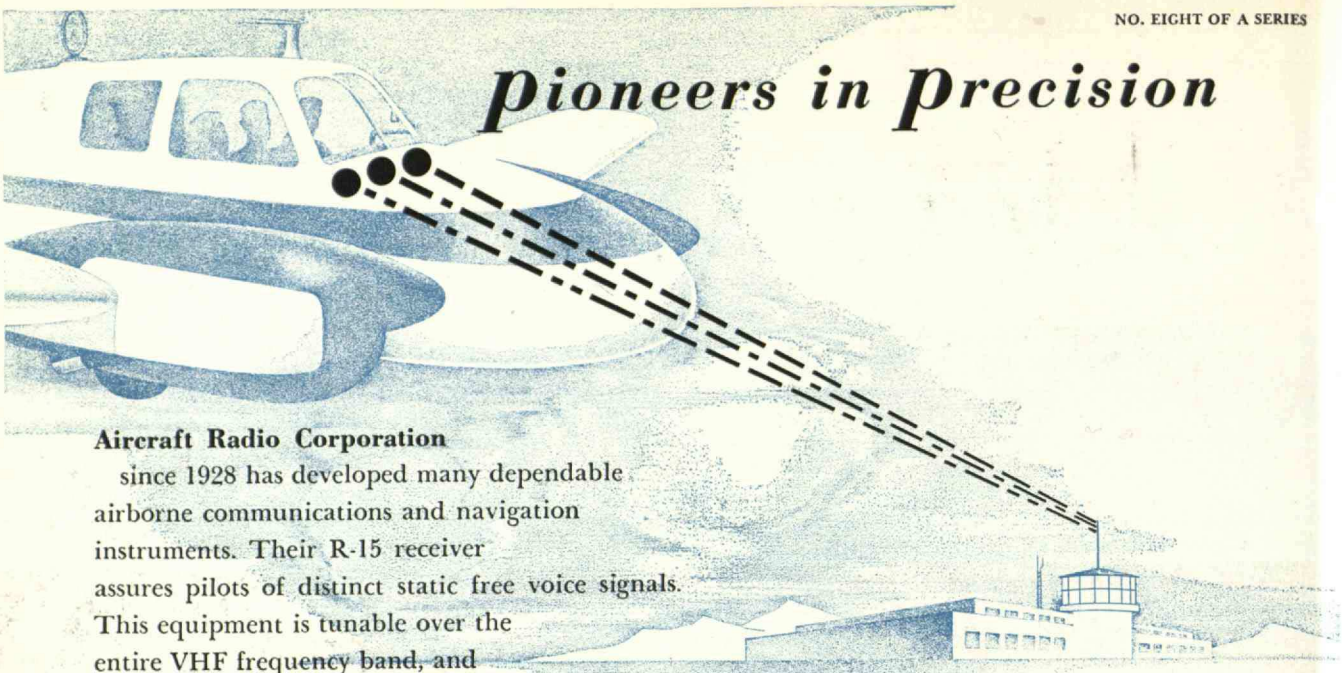
Pioneers in Precision



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since 1928 has developed many dependable airborne communications and navigation instruments. Their R-15 receiver assures pilots of distinct static free voice signals. This equipment is tunable over the entire VHF frequency band, and its controls require minimum cockpit space.

Miniature Precision Bearings
contribute the precise operational characteristics necessary to efficient instrument function under unusual operating conditions. This R-15 receiver is designed for long, trouble-free operation under extremes of humidity, temperature and vibration. Similar and other unusual problems present in thousands of vital equipment designs are being solved with **MPB** ball bearings.

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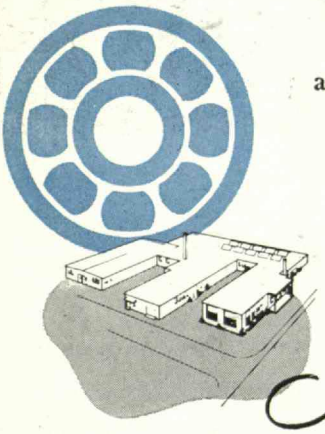
The most extensive engineering knowledge in miniature ball bearing application is available to you — as well as catalog and survey sheet TR4.



Continued expansion in production facilities has enabled us to enlarge the scope of service to our clientele. We would welcome the opportunity of including you.

Miniature *precision* Bearings

Incorporated MPB Keene, New Hampshire

"Pioneer Precisionists to the World's foremost Instrument Manufacturers"

save
space
weight
friction

More *go* per gallon

Your automobile motor has more than 200 parts. They require close to 900 precision grinding operations.

Your motor's crankshaft, for instance, must be dimensionally true within .001 inch. It gets this accuracy from Norton ALUNDUM* grinding wheels on high production Norton grinding machines. The finishing touch is given with a special Norton lapping machine, using Behr-Manning Lightning ADALOX* coated abrasive. Such true, smooth surfaces make parts fit . . . cut friction . . . give you "more go per gallon."

The automotive industry is only one of many industries which rate Norton and Behr-Manning products essential to their production. As the world's largest manufacturers of abrasives and abrasive products, Norton and Behr-Manning keep seeking better ways to help *all* industries make better products.

***NORTON** makes abrasives, grinding wheels, refractories, Norbide grain and molded products, grinding and lapping machines, non-slip floors. Norton Company, Main Office and Works, Worcester 6, Massachusetts.*

***BEHR-MANNING** makes abrasive paper and cloth, oilstones, abrasive specialties, Behr-Cat brand pressure-sensitive tapes. Behr-Manning Corporation, Division of Norton Company, Troy, New York.*

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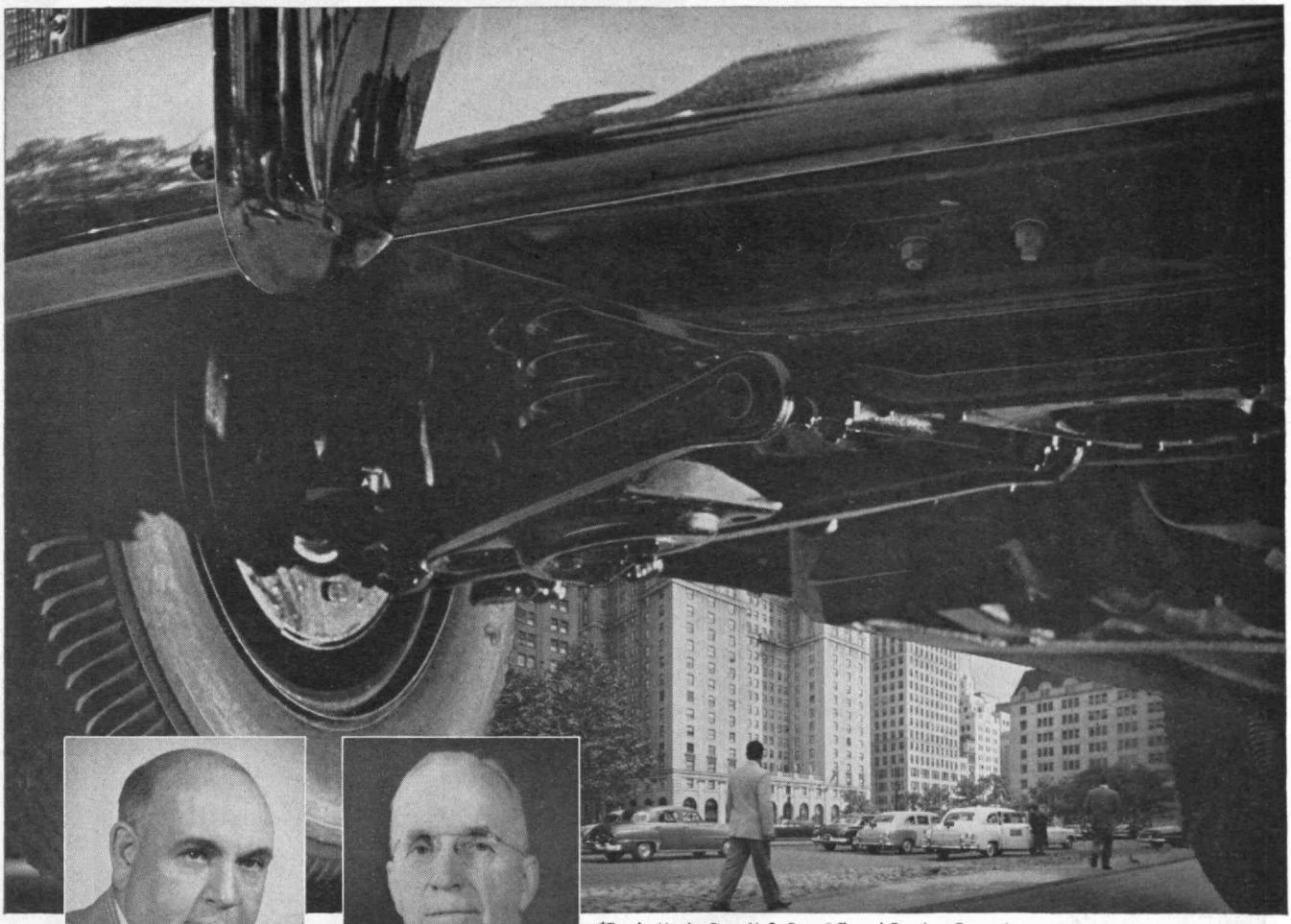

J. HOWARD BAKER is General Superintendent of the Behr-Manning Abrasive Division. His exceptional ingenuity in 34 years' service has resulted in many outstanding improvements in the quality of Behr-Manning products.

HARRY O. ANDERSON has completed 51 years with Norton. Now Chief Grain Inspector of the Abrasive Division, he has originated and patented many improvements in abrasive processing and quality control.

*Trade-Marks Reg. U. S. Pat. Off. and Foreign Countries

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BEHR-MANNING

Making better products to make other products better

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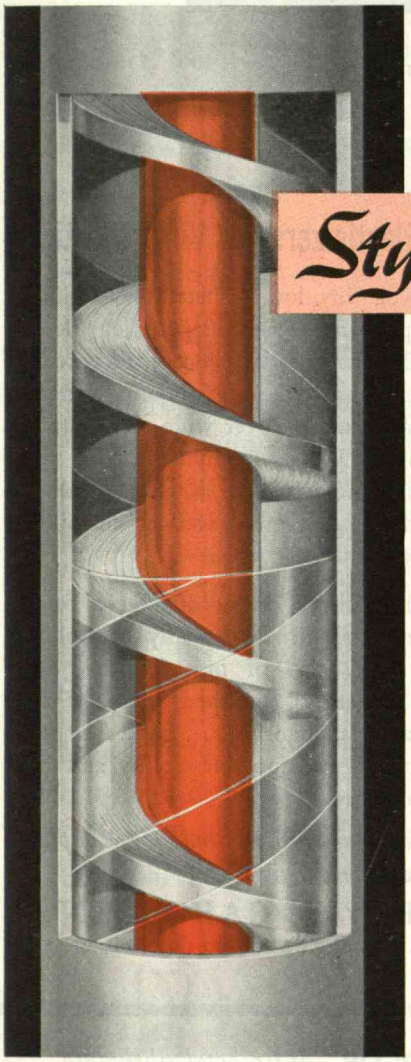
THE TECHNOLOGY REVIEW, April, 1953, Vol. LV, No. 6. Published monthly from November to July inclusive at Emmett Street, Bristol, Conn. Publication date: twenty-seventh of the month preceding date of issue. Annual subscription $3.50; Canadian and Foreign subscription, $4.00. Entered as second-class matter December 23, 1949, at the Post Office at Bristol, Conn., under the Act of March 3, 1879.

TWO REVOLUTIONARY NEW CABLE DESIGNS

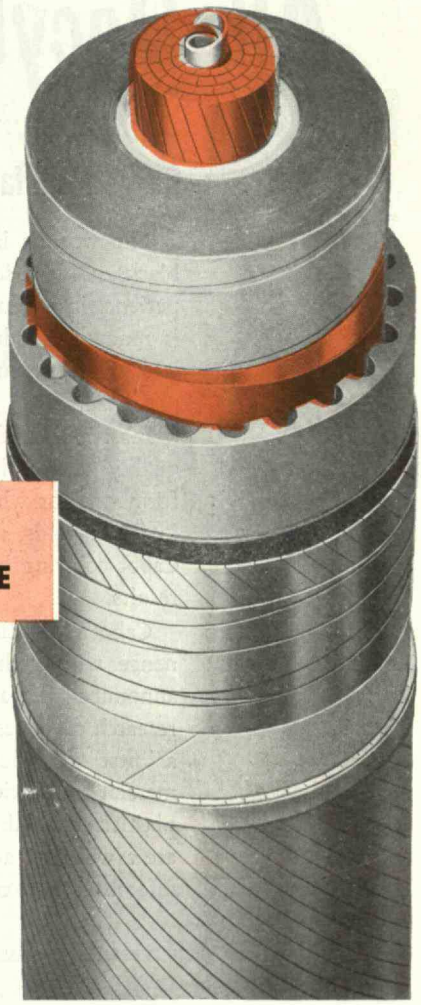
Available to American Cable Users—Illustrate International Scope of Phelps Dodge Research and Technical "Know-How"!



Under arrangements concluded with leading European cable designers, Phelps Dodge Copper Products Corporation offers U. S. cable users:

Styroflex COAXIAL CABLE

developed by Felten & Guilleaume, Cologne, Germany. The strong, semi-flexible aluminum sheathing on this cable opens possibilities for many new and interesting uses.



400 KV
OIL-FILLED POWER CABLE

designed by Les Cables de Lyon, France. This cable is presently in service in Sweden.

These new cables exemplify Phelps Dodge's policy of supplementing its own broad research with the latest foreign developments in cable research and manufacture. This international "know-how" is one of the reasons why Phelps Dodge enjoys a wide reputation among engineers for the finest in modern power and communication cables.

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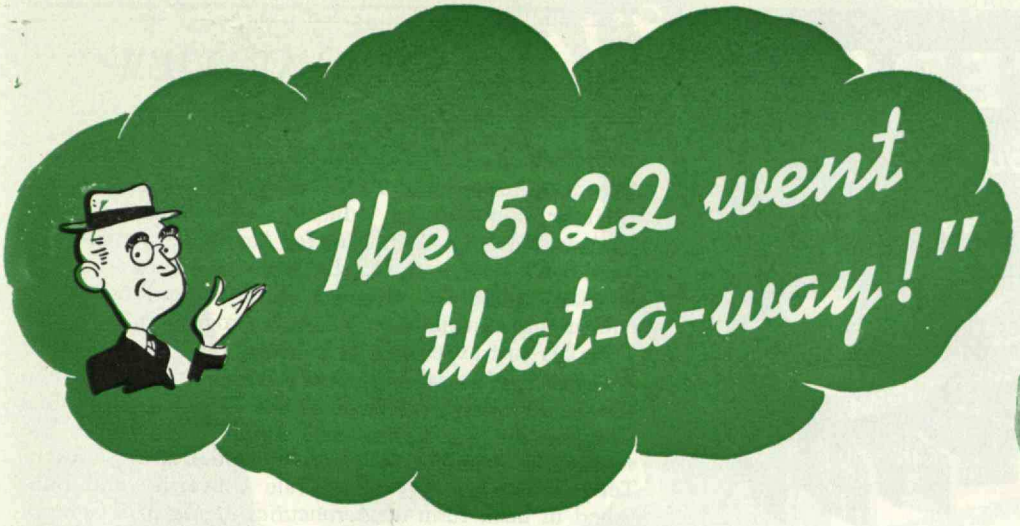


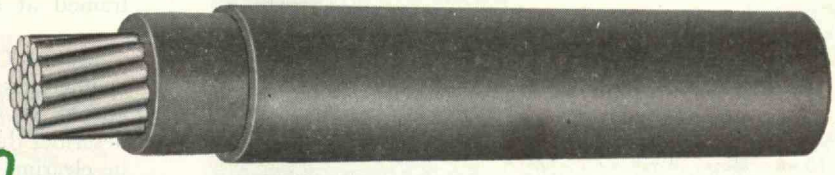
Down the track comes the 5:22 loaded with homeward-bound commuters. She's whistling as she comes calling for the switch that will put her on the outbound track as she leaves the yard limits. Silently and dependably the switch swings into position and the 5:22 has "gone that-a-way."

* * *

How do trains get on the right track? By means of vital relay boxes like the one illustrated here. Relay boxes that are wired with long-lasting, dependable Anhydroprene Case Wire. They offer exceptional resistance to water, moisture, oil, grease, acids and flame. They have no fibrous braids to fray or rot.

The light weight, small diameter and greater flexibility of Anhydroprene Case Wires make them ideal for relay wiring installations. They are easy to handle and terminate.

Specify and get Anhydroprene Case Wires for economy, quality and dependable service. Ask your nearest Simplex railroad representative for more complete information or write to the Railroad Department at the address below.



Simplex WIRES & CABLES

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THE TABULAR VIEW

Today's Aeronautics.—Originator of the Institute's Course in Aeronautical Engineering, pioneer aeronautical engineer, administrator, educator, and chairman of the National Advisory Committee for Aeronautics, PROFESSOR JEROME C. HUNSAKER, '12, has witnessed the entire span of man's successful attempts at flight, and has made outstanding contributions to man's progress in this field. From his vast experience in aviation, Professor Hunsaker discusses the "Social Aspects of Aeronautics" (page 309). His Review story, delivered at the Eighth International Congress for Theoretical and Applied Mechanics last summer in Istanbul, is based upon the 28th series of Terry lectures, delivered at Yale University and published in book form as *Aeronautics at the Mid-Century* in 1952 by Yale University Press. Last summer Professor Hunsaker retired from his post as head of the Department of Aeronautical Engineering at M.I.T. which he established in 1914.

Science and Religion.—A mathematician's point of view is reflected in the essay (page 314) by PROFESSOR EMERITUS H. B. PHILLIPS of the Department of Mathematics, on science and religion. Defining good as that which accelerates progress, Professor Phillips concludes that world morals may be expected to improve steadily, and that, in a statistical sense at least, right makes might. After graduation from Erskine College in 1900, Professor Phillips received the Ph.D. degree from the Johns Hopkins University in 1905. He joined the M.I.T. Department of Mathematics in 1907, becoming head of that Department in 1935. Dr. Phillips is author of more than a score of books and scientific papers, chief among which are "Notes on Einstein's Theory of Gravitation," "Faraday's Law as a Basis of Electromagnetic Theory," and a textbook entitled *Vector Analysis*.

Health Enterprise.—A major aim of modern medicine is to prevent, as well as to cure, maladies. An unusual phase of such preventative medicine has been in operation at M.I.T. since 1947 and is described (page 315) by DR. HARRIET L. HARDY, Assistant Director of the Institute's Medical Department. In addition to being in charge of the Occupational Medical Service at M.I.T., Dr. Hardy has been chief of the Occupational Medical Clinic of the Massachusetts General Hospital since 1949, and is consultant to the Atomic Energy Commission, the Massachusetts Division of Occupational Hygiene, and the Atomic Research Center at Ames, Iowa. Dr. Hardy is a graduate of Wellesley College, took the M.D. degree from Cornell University Medical College, and trained at the Philadelphia General Hospital.

Project Glacier.—Bringing together his knowledge of engineering, geology, and history in his article, "Project Glacier" (page 319), E. H. CAMERON, '13, poignantly describes the essential and prosaic task of our forefathers in clearing their fields and enclosing them with stone fences. Mr. Cameron has had a wealth of professional experience in civil engineering since his graduation from the Institute in 1913. For the past decade, Mr. Cameron has been head of the Technical Publications Division of Jackson and Moreland, Boston firm of consulting engineers. Mr. Cameron is no stranger to Review readers; his first Review article appeared in 1932, and for about 10 years he has averaged one article per year.

CONTINENTAL'S PROOF BOOK

E. J. GIVENS

Pennsylvania State College, B. S., 1944. Joined New York Wire Cloth Co. in 1948 as Industrial Engineer and became Purchasing Agent in 1950. Secretary of York Purchasing Agents' Assn.; member of National Assn. of Purchasing Agents; Purchasing Agents' Assn. of Phila. and Society for Advancement of Management.

Incorporated 1892

NEW YORK WIRE CLOTH COMPANY
441 EAST MARKET STREET
YORK, PENNSYLVANIA

GENERAL OFFICES:
NEW CANAAN, CONN.

February 11, 1953

Continental Screw Company
New Bedford, Massachusetts

Gentlemen:

As manufacturers of a new kind of product--the Durall aluminum tension screen--we have been in an excellent position to appreciate Continental Screw's quality and service. For instance, we must have a screw that even a housewife can drive, and with a head large enough to seat properly in our screen clamp bracket. The screw that you designed for us has more than met our specifications.

Another feature that has resulted in additional sales appeal for our product is your method of fastening our screws on a tape, which has been pre-printed with our Durall brand name. This tape has proven a very convenient method of insuring that the exact number of screws reaches each customer.

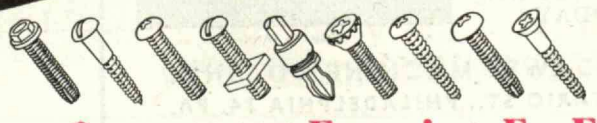
Over a period of twelve months, our production schedules fluctuate, but whenever this happens you respond promptly with every possible effort to keep our line operating. We want you to know that this type of performance rates very high with us.

These extras, plus a top quality product, have given Continental the number one spot on our vendor list for screw requirements. It has been a pleasure to work with you during the past and earnestly hope this same association will continue for many years.

Sincerely,
E. J. Givens
E. J. Givens,
Purchasing Agent

You too can count on Continental©

CONTINENTAL SCREW COMPANY INC. 1904



Manufacturers of HOLTITE Fastenings For Every Purpose

CONTINENTAL SCREW COMPANY, NEW BEDFORD, MASS., U. S. A.

MAIL RETURNS

Nostalgia Evoked

FROM WILFRED BANCROFT, '97:

I have just read with great interest and a touch of nostalgia the "History of Bacteriology at M.I.T." by Murray P. Horwood in the January, 1953, Review: the references to Professor Sedgwick in that article brought up happy stimulating memories. He was a great scientist, great teacher, and a great human being. I was Course II so I never studied under Professor Sedgwick but I had the good fortune to know him and Mrs. Sedgwick and to share the hospitality of their charming home.

In the Class of '97 *Technique*, page 189, is a rather intimate biography of Professor Sedgwick; as he was kind enough to read this before publication, the facts in this brief life are correct.

Haverford, Pa.

Ordeal Omitted

FROM WM. HOWARD BEASLEY:

In your report on John Jewkes in the February, 1953, issue of The Review (page 211) you failed to mention his book *Ordeal By Planning* (Macmillan Company). This book was widely read both in England and in the United States, and had considerable effect in reversing the trend "to the left." It was frequently quoted by Raymond Moley. Jewkes should be heard more!

Dallas, Texas

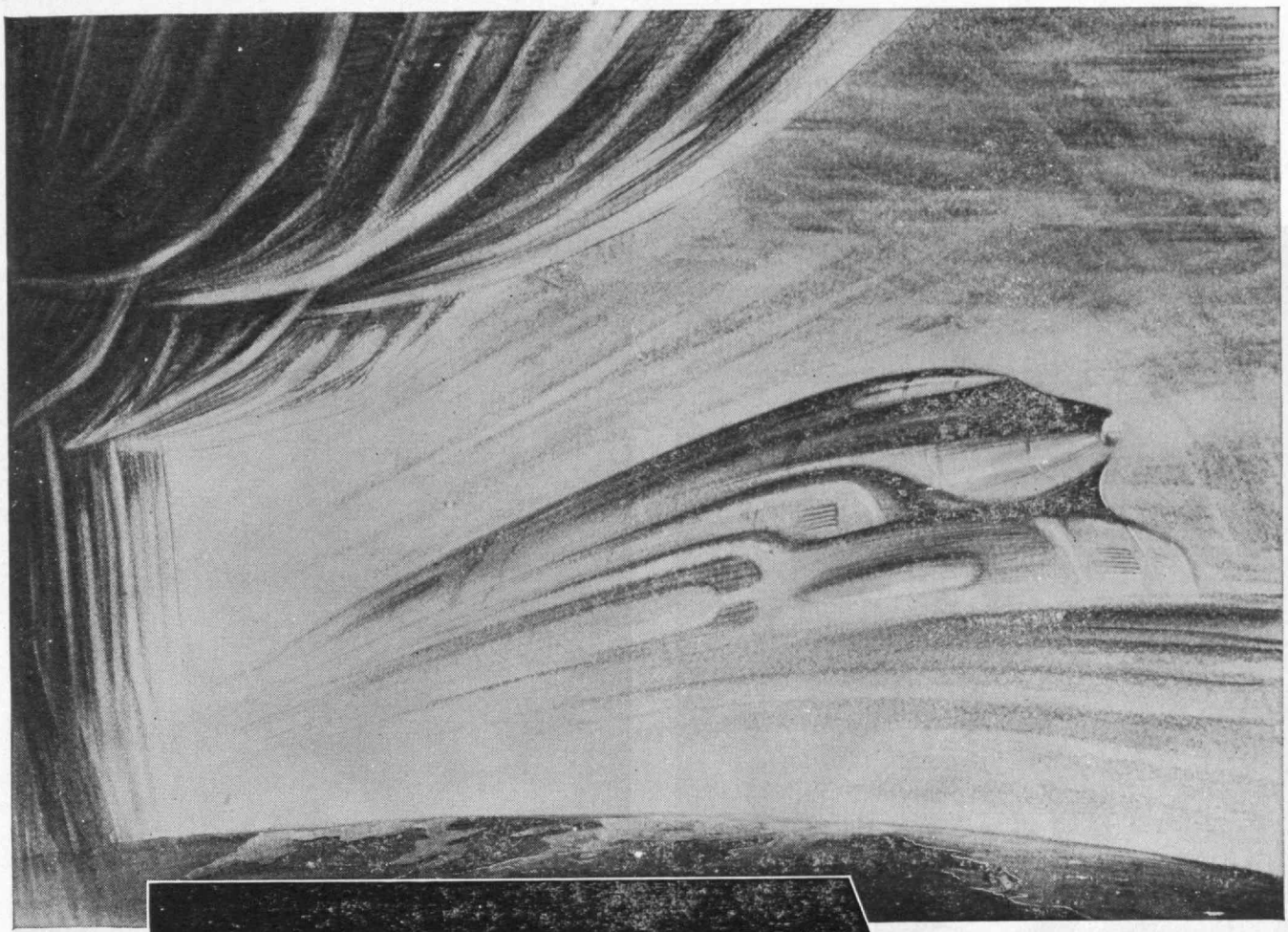
Philosophical Profit

FROM SAMUEL E. MCCRARY:

I wonder if you could send me three copies of the January, 1953, issue of The Review. I am particularly interested in the article "The Two Philosophies" by F. Alexander Magoun and R. Carter Nyman.

I would like to pass this article on to an admiral and to a member of the clergy. I believe they will profit by reading it. The other copy I would like to keep for myself.

Falls Church, Va.



BEYOND THE HORIZON....

Designers are seeking new alloys from the metallurgist in order to develop higher speed transportation.

Higher speed calls for materials having greater strength in lighter sections, often with little or no sacrifice in toughness. Molybdenum contributes vital properties to better alloys which will certainly be developed for the future.

Climax furnishes authoritative engineering data on Molybdenum applications.

Climax Molybdenum Company
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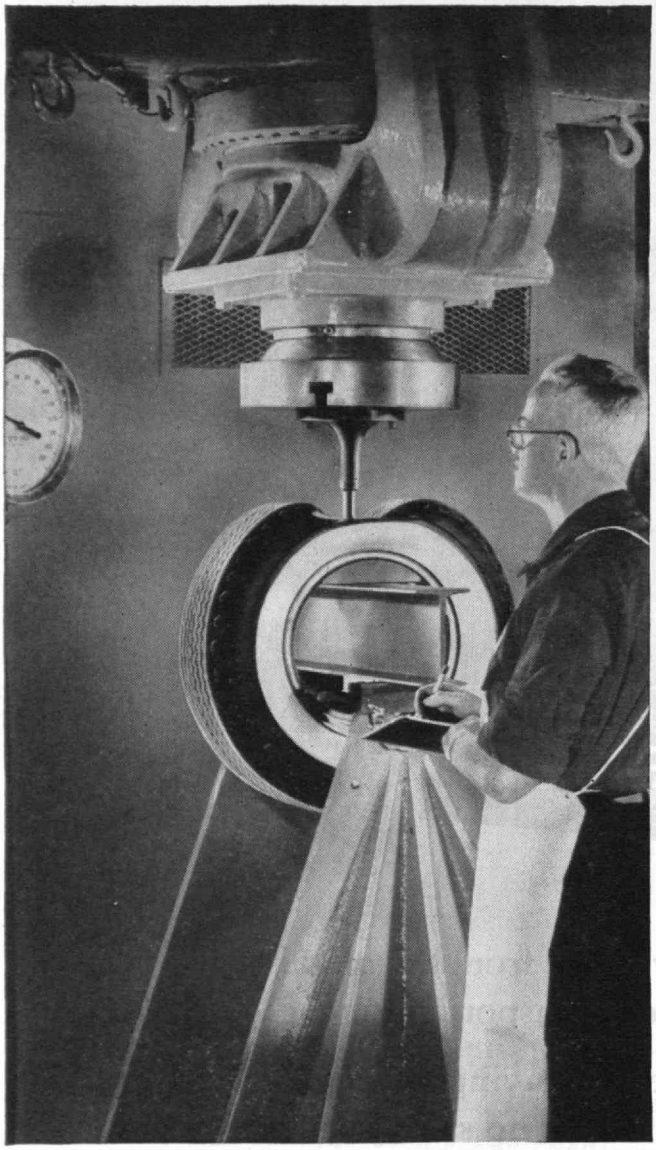
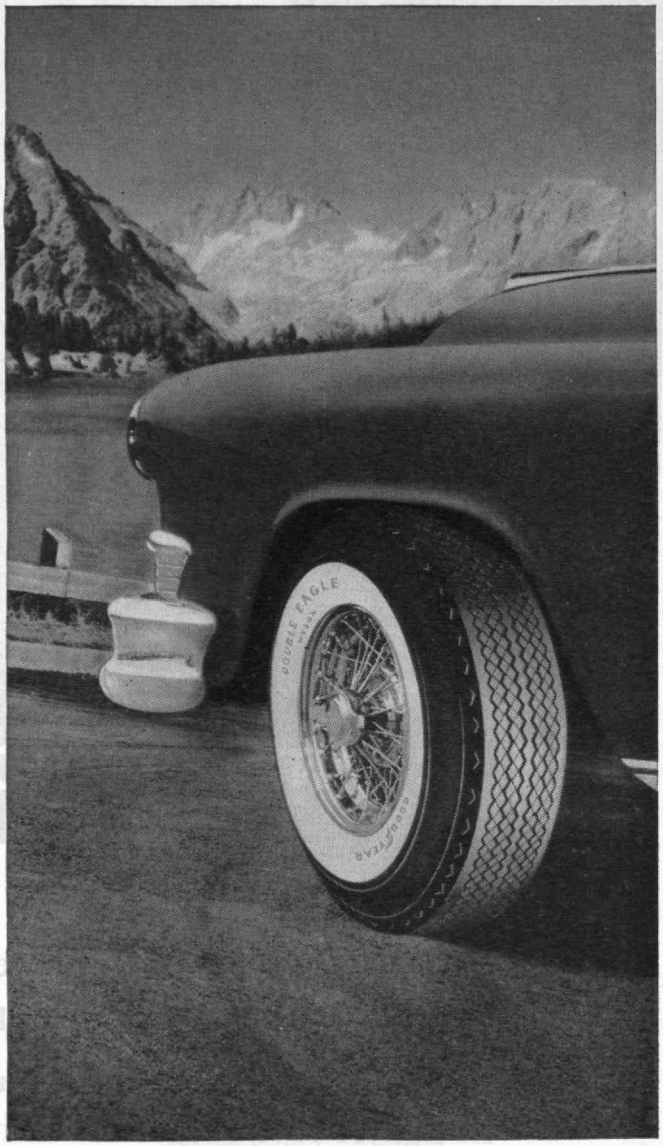
MOLY

Only a Nylon Cord tire could withstand this pressure...



This test is like driving a blunt spear deep into your tire. The rounded end of that hydraulic punch is only 1¼ inches in diameter! Three types of tires took this test. The standard cord tire failed at 1480 lbs. The second, with regular premium cords, failed at 2500 lbs. But the All-Nylon Cord Double Eagle took 3876 lbs., before that tough Nylon Cord body failed!

Get this extra strength and safety in the All-Nylon Cord Double Eagle!



We call this All-Nylon Cord tire the Plus-10 Double Eagle because it is superior to any other tire in the 10 most important aspects of tire service! Up to 42% greater mileage! Safer, surer traction! And the most luxurious ride on the road. But with all its advancement, the All-Nylon Cord Double Eagle costs only about 5% more than premium tires made of rayon! Goodyear, Akron 16, Ohio.

America needs better, safer roads. Let's bring them up to PAR.

PLUS-10 DOUBLE EAGLE– The world's finest passenger-car tire!

GOODYEAR

Double Eagle, T. M.—The Goodyear Tire & Rubber Company, Akron, Ohio

H. Armstrong Roberts

"With the calm patience of the woods I wait
For leaf and blossom when God gives us Spring!"
—John Greenleaf Whittier

THE TECHNOLOGY REVIEW

TITLE REGISTERED, U. S. PATENT OFFICE

EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

CONTENTS *for April, 1953*

Vol. 55, No. 6

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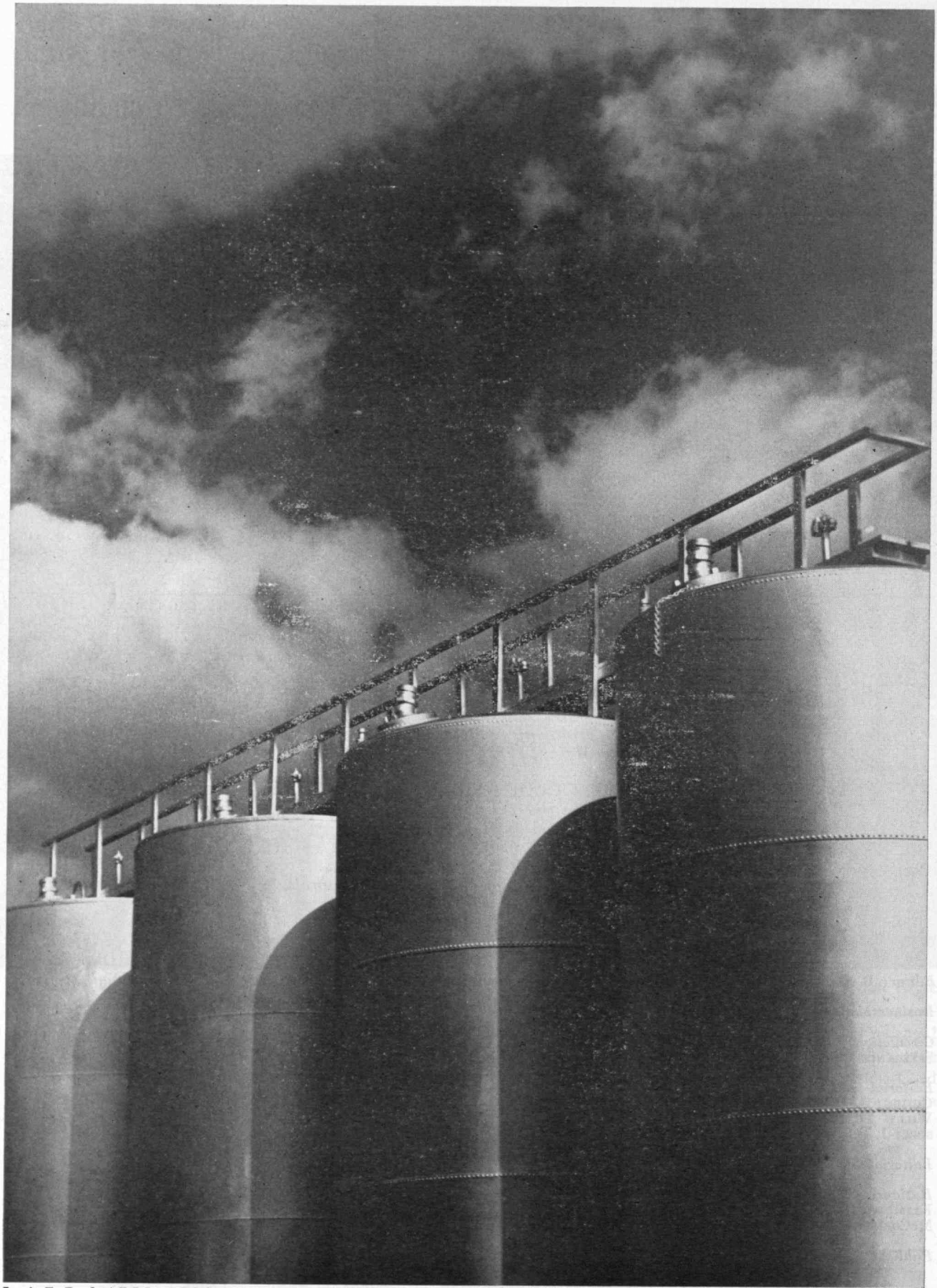


Lewis T. Reed, A.R.P.S., A.P.S.A.

Pylons of Industry

THE
TECHNOLOGY
REVIEW

Vol. 55, No. 6 April, 1953

The Trend of Affairs

Radiant Risks

Ever since Roentgen discovered x-rays in 1895, danger of radiation injury to human beings has existed. X-rays, together with alpha, beta, and gamma rays, are designated as "ionizing radiation." All four of these radiation types do their damage by injuring or destroying living cells through ionizing action. The injury may be superficial, such as the "burns" (really ulcers) suffered by the early experimenters with x-rays; or may be more profound, such as damage to the tissues that regenerate the blood. Much remains to be learned of the ramifications of radiation injury, although current research on the subject is extensive.

The advent of nuclear fission and atomic bombs, and publicity on radiation injuries to the people of Nagasaki and Hiroshima, have created general public awareness of radiation injury. It is also generally known that elaborate and effective precautions are taken – indeed are legally mandatory – in the operation of nuclear reactors and particle accelerators, and in the handling and use of radioactive isotopes. What is not so generally recognized is the extent to which total radiation exposure of the general population has grown, not only through the newer radiation sources related to nuclear fission but also from conventional sources, such as x-rays used in the healing arts. A summary* of this subject just published gives considerable pause to the reader.

Growing and widening use of x-ray units may be projected into one's own experience, by considering that ubiquitous practitioner of the healing arts, the dentist. A decade or so ago, few dentists had their own x-ray units; patients were referred occasionally to radiologists who used heavy, elaborately shielded, permanently installed equipment. Today, lightweight portable x-ray units enable any dentist to make roentgenograms in his own office. Indeed some 65,000 x-ray units are now employed by dentists. X-ray equipment used by physicians, osteopaths, and chiropractors, and in hospitals bring to more than 125,000 the total number of x-ray units now used in this country for diagnosis, and for treatment of dermatitis, cancer, and other ills.

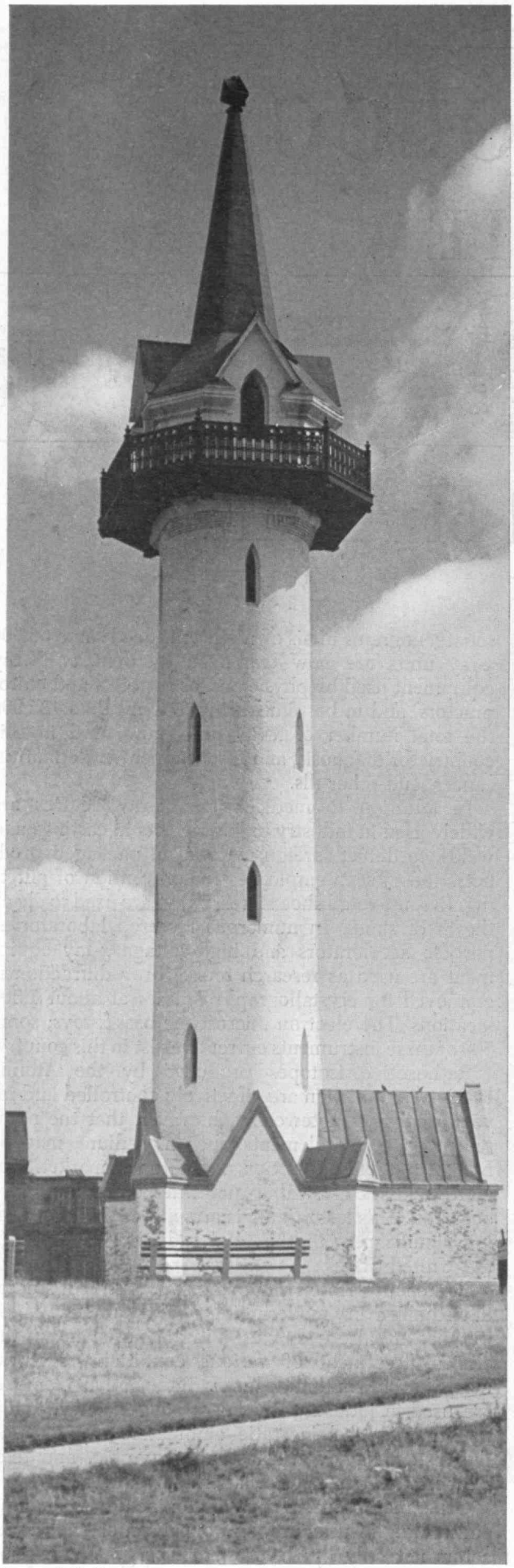
In addition to medical uses, x-ray devices are widely used in industry to find defects in castings and welds, to detect foreign material in packaged products, and to scan employees for prevention of pilfering. In some retail shoe stores, x-rays are used to check the fit of shoes. In numerous research laboratories, particle accelerators and high-voltage x-ray equipment are used as research tools. X-ray diffraction is employed for crystallography studies at about 1,500 locations. The electron microscope uses x-rays; some 500 of these instruments currently exist in this country.

Radioactive isotopes produced by the Atomic Energy Commission are effectively controlled and inventoried. It is noteworthy, however, that the naturally radioactive elements, such as radium, may be bought without restriction on the open market. Numerous losses of sizable quantities of radium have occurred. This lost radium is around somewhere, adding significantly to the total radiation exposure in the United States.

Radioactive isotopes are employed in tracer studies in virtually every modern biological laboratory. These isotopes are also widely used in diagnosis, and in the clinical treatment of various conditions, such as hyperthyroidism and cancer. Radioactive elements are used in industrial thickness gauges, in self-luminous paints, and in static eliminators employed in the textile, paper, printing, photographic, and telephone industries, and on laboratory equipment.

Other major sources of radiation include the mining and milling of uranium, and operation of nuclear reactors not only by the Atomic Energy Commission

* Moeller, D. W., Terrill, J. G., and Ingraham, S. C., "Radiation Exposure in the United States," *Public Health Reports*, 68:57-65 (No. 1, January, 1953).



Raymond E. Hanson

◀ *Contrast of the old and the new is this tower used during the Eighteenth Century when Boston was evacuated by the British. The artillery for this Revolutionary Fort at Roxbury, Mass., was brought from Fort Ticonderoga, New York.*

but also by universities and industry. Over 100 particle accelerators of various types are now in operation in the United States. Finally, substantial radiation results from atomic bombs detonated at Atomic Energy Commission proving grounds for testing purposes.

How much radiation exposure does this all add up to? Is there any threat to human well-being? First it must be acknowledged that mankind always has been exposed to some degree of radiation, from cosmic sources and from natural radioactive elements. It is estimated that an individual who lives to be 70 years of age receives, during his lifetime, an average of nine roentgens of radiation from such sources. (The "roentgen" is the unit of ionizing power, and hence of potential biological balefulness.) This degree of irradiation does no known damage. Indeed the National Committee on Radiation Protection recommends as safe up to about 15 roentgens per year, with the whole body exposed to continuous daily gamma radiation. As a result of the manifold radiation sources summarized, some members of the general population may be exposed to radiation approaching the safe maximum. Clearly the possible public health effects of the cumulative radiation from the many sources now existent in this country – many of them unsuspected – must be watched closely.

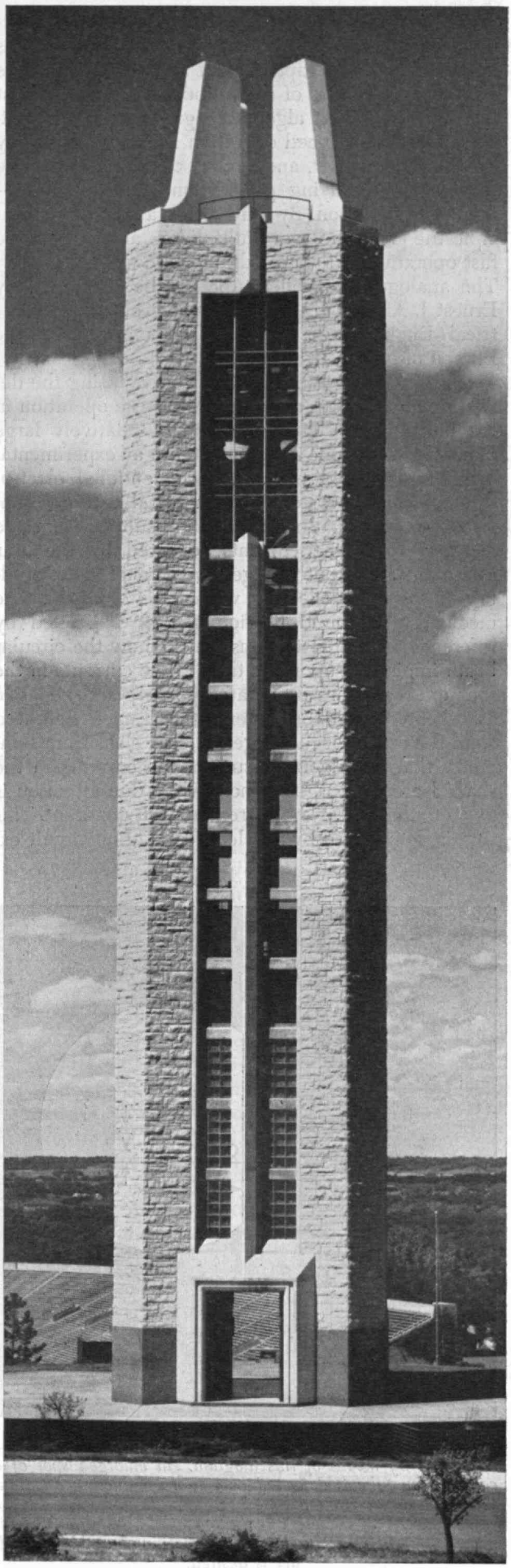
In exposure to ionizing radiations, the need for exercising care is greatest among those persons whose industrial or research activities bring them into contact with radioactive substances or radiation-producing machines. Such persons face a potential occupational hazard against which adequate precautions and protective measures can readily be taken. An unusual program of preventative medical service which meets the challenge of technological occupational hazards has been in operation at M.I.T. since 1947, and is described on page 315 of this issue of The Review.

Demand and Supply

JUST two years ago, the British government started the rationing of sulphur and sulphuric acid. Europe and Great Britain were joining in demands that the United States ease the world sulphur shortage by increasing its exports. American sulphur producers and users were insisting that exports be curtailed. Visible reserves along the Gulf Coast of this country, which supply the bulk of the world demand for this basic chemical raw material, were being exhausted. Today, though demand has not lessened, production has increased sufficiently so that the shortage, if not eliminated permanently, is at least greatly eased. United States consumers may now keep a 60-day supply on hand, instead of only a 25-day supply, and distribution controls on sulphuric acid have been dropped.

Sulphur is not a particularly rare material. It ranks about 15th among the most common elements in the earth's crust, just below carbon and well ahead of

► *A product of Twentieth Century engineering and architectural form is this New War Memorial which has been erected at the University of Kansas in Lawrence. Among the differences in shaft construction of the two centuries, are the apertures.*



Ward Allan Howe

such important industrial metals as copper, zinc, and lead. Many large deposits, such as those in Sicily and Spain, have been worked for centuries. However, when the huge sulphur domes of the American Gulf Coast were discovered, and the invention of the Frasch process permitted the sulphur to be pumped up in almost pure form, the United States obtained a near monopoly of the world market.

Very large deposits of metallic sulphides or pyrites are scattered throughout the world, and Spain, Portugal, and Cyprus export substantial amounts. It takes almost twice as much plant to make sulphuric acid from pyrites as from elemental sulphur, however, and neither the mining nor the chemical industry is geared to replace crude sulphur to a major extent.

An encouraging event is the recent discovery of a large sulphur dome in the lower Mississippi Delta region. Construction of the plant is in progress and production is expected to start in 1953. Planned output is 500,000 tons a year, the equivalent of about half the free world's deficit.

The world's present annual production of native, or crude, sulphur is in the order of 6,500,000 tons, with the United States mining the great bulk of it. Prewar production was less than half this figure. The sulphur equivalent of the very large tonnages of pyrites that are mined yearly is at least several million tons. Significant amounts of sulphur are also produced as by-products from mining, metallurgical, and chemical processes. Many plants already exist for salvaging sulphur from copper smelters, coke-oven operations, petroleum refinery gases, and city gas production. It is estimated that the total amount of sulphur used by the world, from all sources, is over 12,000,000 tons per year.

When the outbreak of the Korean War brought the world's sulphur shortage to the crisis stage, long-range plans for increasing the supply were made that include nearly 100 separate projects. Many new mines have been opened, there has been a revival of interest in deposits hitherto considered too inaccessible to merit exploitation, and new plants for salvaging by-product sulphur have been completed or are under construction. Collectively, these projects are expected to add 4,000,000 tons of sulphur annually to the world's supply in 1955.

Analogue Multiplier Tube

ADVANCES in science and engineering during the past few years have greatly increased the need for high-speed electronic computers. One of the most serious problems confronting the person wishing to build a high-speed analogue computer is that of finding a suitable means of multiplying. Scores of devices and circuits have been used for this operation; however, none of them is entirely satisfactory for general applications. The basic requirements imposed on a multiplier that is to be useful in general applications

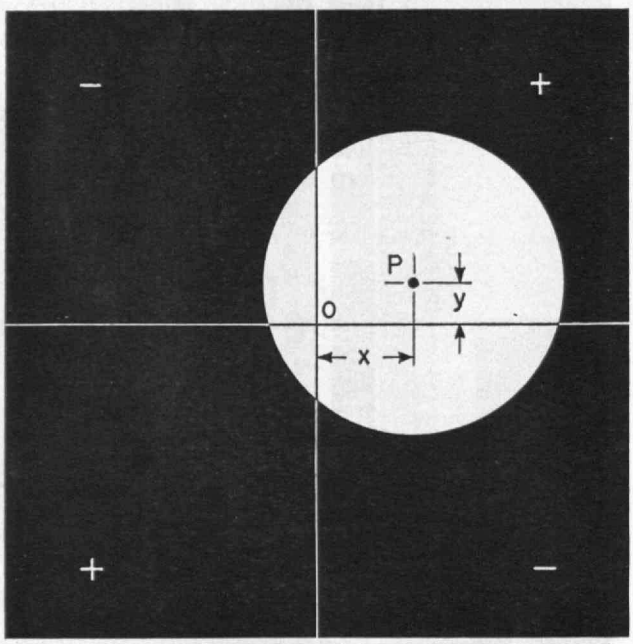
are: (1) good accuracy, (2) fast operation, and (3) four-quadrant operation. The last of these requirements means that the multiplier must accept both positive and negative values of each input variable and must provide the correct algebraic sign with the product. In general, high-speed operation is obtained only by sacrificing accuracy, and several otherwise attractive means of multiplying provide only one – or two – quadrant operation. By introducing a new basic principle the electron-beam multiplier is able to provide fast operation in four quadrants with good accuracy. The analogue multiplier tube has been devised by Ernest J. Angelo, Jr., '49, Assistant Professor of Electrical Engineering, in research sponsored by the Bureau of Naval Ordnance.

High-speed operation is obtained by using the deflection of an electron beam as the basic operation in the multiplier. A circular beam of relatively large diameter (about one inch diameter in an experimental tube) is projected through a conventional electrostatic deflecting system upon a metallic target consisting of four quadrants that are insulated from one another. From the currents collected by the four quadrants an output voltage proportional to the product of the two deflecting voltages is obtained. The mechanism of multiplication can be explained by reference to the illustrations which show the circular beam impinging upon the target. The currents in the four quadrants are designated positive and negative as indicated. With the center of the beam, *P*, deflected from the center of the target, *O*, it is clear from symmetry that the algebraic sum of the currents in the shaded areas, at right, cancel when due attention is given to the sign of the current in each quadrant. This sum is determined by an electrical adding circuit external to the multiplier tubes, and is equal to the current in the central rectangular area unshaded in the right-hand illustration. If the current density is uniform throughout the entire area of the spot, the algebraic sum of the quadrant currents is proportional to the product of the x and y deflections, so long as the spot is not completely deflected from any of the quadrants.

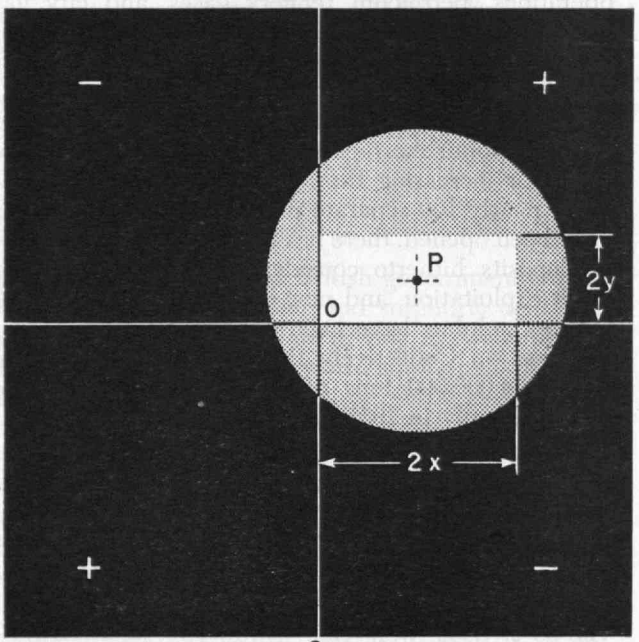
In an experimental tube, the maximum errors were approximately 2 per cent of the maximum product under static operating conditions. The speed of operation was limited by parasitic capacitance shunting the output circuit. For the impedance level selected, the response to a suddenly applied signal was within 2 per cent of its final value within 10 microseconds.

The accuracy of multiplication depends primarily on the uniformity of current distribution in the electron beam, and the magnitude of the output voltage depends on the total current in the beam. Therefore an electron gun of special, although simple, design is used to generate a high-current, uniform beam. The accuracy also depends on the linearity of deflection and the accuracy of the target construction; however, these considerations do not constitute a serious problem. Manufacuring problems should be no more difficult than those encountered in the production of conventional cathode-ray tubes.

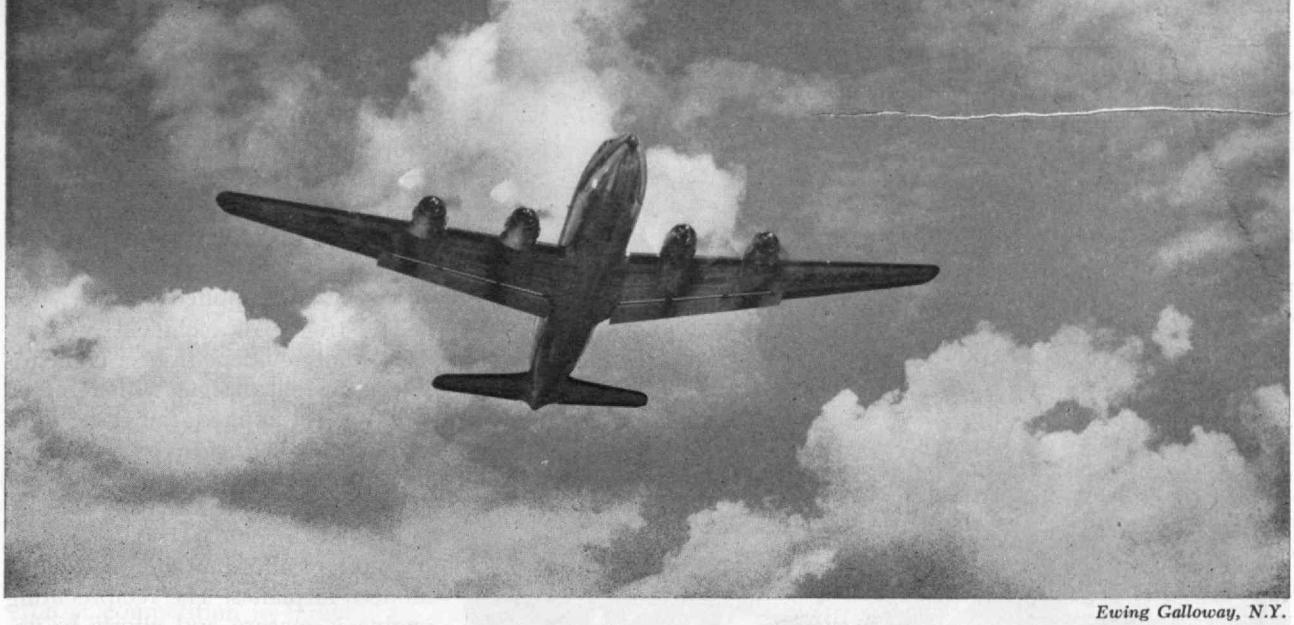
In addition to its applicability in electronic computers in general, the tube appears to be well suited to a variety of special operations that involve multiplication. Among these are modulation, demodulation, harmonic analysis, the computation of certain types of integrals, such as Fourier transforms and correlation functions, and, in conjunction with a differentiating circuit, general integration.



The mechanism of multiplication by an electron tube may be illustrated by means of this diagram. An enlarged spot of a cathode ray tube is deflected over four conducting quadrant plates insulated from each other. The displacement of the center spot, P, *from the intersection of the quadrants,* O, *is made proportional to the displacements,* x *and* y, *whose product is desired.*



With proper attention to quadrant signs, cancellation of currents occurs for those regions of the enlarged spot represented by the shaded areas. Uncompensated current, represented by the unshaded area, whose dimensions are indicated as 2x *and* 2y, *is proportional to both the horizontal and vertical deflections of the spot, and hence is a measure of* xy, *or the product of* x *and* y.



Ewing Galloway, N.Y.

Social Aspects of Aeronautics

Society Is in the Process of Adjusting Itself to the Innovation of Flight. The Process Is Painful and the Ultimate Pattern Has Not Yet Been Evolved

By JEROME C. HUNSAKER

For Americans, it may be pleasant to think that the Wright brothers invented the airplane in a flash of genius and so realized the age-old dream of human flight, but this would be to capture only a portion of the truth. However, the Wrights were the first men to fly, and they did devise and use a practical means for controlling their airplane in pitch, roll, and yaw. Had they not succeeded, it now seems certain that someone else would. The time was ripe, the incentive great, and the basic concepts of the airplane and its propulsion existed. Mechanics was highly developed at that time and ready for engineering application.

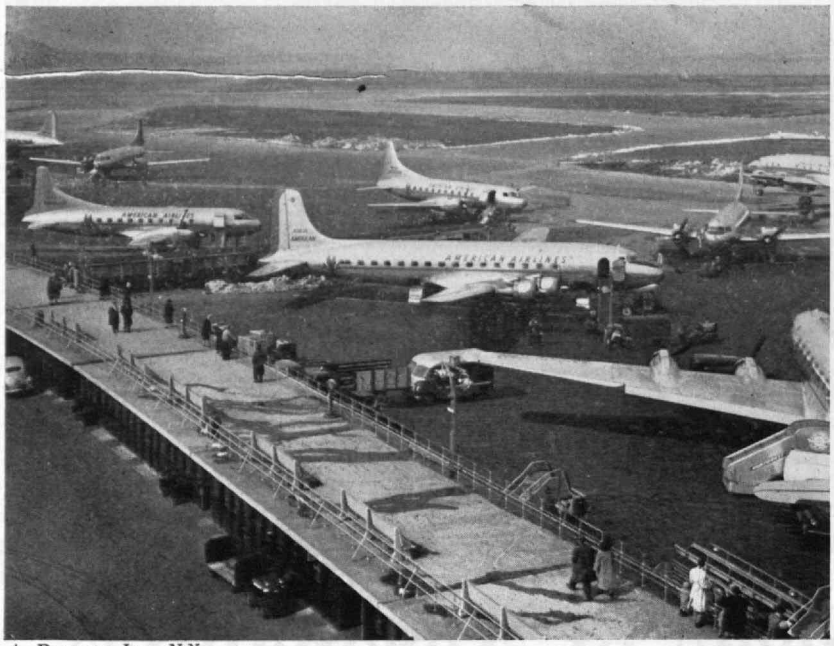
The airplane was born into a society able and ready to lavish all the resources of the machine age on the mechanical infant. The airplane was also born into a time of abundant energy from oil, and at a time of violent nationalism. Great States were changing in relative power and were strained by economic pressures and instability. The Twentieth Century opened with the Russo-Japanese War and soon experienced World War I.

It is no wonder that the airplane was at once taken up for intensive development by those States that foresaw its military possibilities. In the succeeding years we have witnessed the progressive conquest of the air. While the airplane's rapid development into a practical vehicle was a consequence of the state of the society into which it was born, it soon began to change that society. Every person alive today is affected. There is a change in his relation to distant places and peoples. Traditional geographical barriers have disappeared and the air presents a clear route to those distant places and peoples; a route for trade and the interchange of visits and ideas.

Likewise, the air can be a route for the arrival of sudden destruction. Air power reaches into the interior of a country, to islands formerly isolated by the sea, and gives a new and frightening weapon to an aggressor. Just now, the divided world is in a state of strain and many wish there were no airplanes with bombs to destroy the illusion of isolation. The times are no doubt dangerous, but that is not a new condition. Man has always feared a fiery end. The threat should impel nations to prudence and common sense, just as the Last Judgment of religion is an incentive to individual virtue.

There may be an historical parallel with ships. In the Mediterranean, sea power served trade and colonization and likewise war. The sea power of Elizabethan England led to an immense expansion of overseas enterprises. The golden age of Elizabeth and Shakespeare came to full flower with the opening of the sea as a universal highway.

The airplane is relatively new, but air power has already profoundly affected the outcome of a great war and still constitutes a threat to the security of great nations. In its civil applications, however, the airplane has yet to attain its potential world-wide utilization. But air transportation is already well established and is growing as fast as political, economic, and technical conditions permit.



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Since Charles Lindbergh's famed Atlantic flight, approximately 1,500,000 ticket-holding passengers have flown across the Atlantic Ocean by scheduled air line service, according to the International Air Transport Association. Probably an equal number have crossed on military and nonscheduled air transport. This summer, it is expected that more than 1,000 passengers will fly across the North Atlantic every day.

The airplane of today has come a long way from the Wright airplane of 49 years ago. The basic type has continued to the present day but its performance was rapidly improved by application of the advancing technology of the new century. Orville Wright was not unaware of the military value of the airplane, since his first sale in 1908 was to the U.S. War Department. However, he always contended that he and his brother Wilbur thought of their airplane as a contribution to international communications, trade, and good will. The next 50 years may prove him right.

Designers were at first the inventors, then engineers and scientists took over. The demands of the airplane led to the creation of strong light alloys, high-octane gasoline, and high-output engines, and special operating equipment using radio, radar, and autopilots. Old ideas for a gas turbine were resurrected and applied with spectacular success to jet propulsion.

Taking speed records of propeller-driven airplanes as a measure of progress, the increase has been from about 40 to nearly 500 miles per hour, or at a rate of some 10 miles per year of effort. Simply projecting this trend suggests that the next 50 years should bring the speed record to 1,000 miles per hour. A fallacy must be present here, because the newspapers inform us that jet-propelled research airplanes have repeatedly flown at supersonic speeds. Closer examination of the position shows that the jet-propelled airplane is not the airplane of the Wright brothers; something new and revolutionary has been added. A radically lighter and more powerful means of propulsion, eliminating the propeller, is a mutation that upsets the trend of statistics of past growth. The propeller-driven airplane has indeed made a normal growth curve, topping off between 1940 and 1950, with a maximum sea-level speed below 500 miles per hour. The performance of jet-propelled airplanes is too recent to establish a trend from which to venture a forecast. All we know is that we shall have to do with a new kind of airplane to which vastly increased thrust can be applied.

The trends of technical progress are usually evident from a comparison of current designs with research data not yet applied, but there is always a time lag before research findings come into general use. For example, it is evident that the jet propulsion gas turbine is revolutionary in its effect of affording more power to modern airplanes. The reciprocating engine is mature and efforts to improve it have reached a stage of diminishing returns. The gas turbine is simpler, lighter, and more compact. Its big disadvantage is its youth, and consequent occasional unreliability and a tendency to extravagance. Youth will be outgrown, and hence one predicts that reliability and economy will be established.

Air transport cannot proceed at once to exploit many possibilities of the art suggested by current research. A number of difficult problems must first find practical solutions. The public is conditioned to expect uninterrupted progress but the trees do not grow to the sky. There are always limitations in any art; either permanent, due to physical laws, or temporary, due to the current state of technology.

Consideration of the power needed for very high speed shows that there is a physical limitation to the speed of the conventional airplane due to the compressibility of the air. Near the speed of sound, the air offers very greatly increased resistance. It fails to move aside as the airplane advances. Shock or compression waves are formed which may destroy the smooth flow over the wings, changing the aerodynamic forces in magnitude and distribution. As a result, the airplane may become unbalanced, get out of control, or it may disintegrate under severe buffeting. One can say, from what is known now, that conventional airplanes with piston engines are limited, for practical use, to speeds well below the speed of sound. The piston engine has not enough power to push to such a speed, and the conventional airplane could not be flown there even if enough power were applied.

Actually, there is no absolute sonic barrier. Jet propulsion can give power enough, and modern aerodynamic research has shown how to shape wings and bodies to be flown safely through the sonic range of speeds and into the supersonic. Here we have an answer to the question as to the relative precedence of research and bold experiment. Bold experimenters might have tried for supersonic flight as soon as jet propulsion was available, but they would not have survived enough experiments to learn from their experience. Without the guidance of aerodynamic research, supersonic flight would not have been achieved experimentally today. The writer believes

that there is good reason to expect that technological progress based on applied mechanics will continue to improve the airplane for use in either peace or war.

A brief review of the development of air transportation in the United States may serve to bring out some of the social and economic effects of this innovation.

Air Transportation

Civil air transportation began in the United States in 1926 with postal contracts to pioneer air lines. The air mail payment became in fact a subsidy to encourage the development of civil aeronautics. Whether it was a subsidy to the operator, to the user of the air mail, or to the passenger is immaterial. The effect was to promote a rapid growth, sometimes too rapid, of air transportation. The airlines carried some 500,000 passengers in 1934 but were losing money. There was cutthroat competition in bidding for air mail contracts and passengers. Losses in this business were chronic.

The Civil Aeronautics Act of 1938, which evolved after prolonged discussion, furnished a practical means of reviving and encouraging the air lines. The Act authorized, when in the public interest, financial aid to private air lines that met safety and economic standards. Mail payments and federal airways constituted the lever to develop a private air transport system to be adequate for the postal service, the air commerce of the nation, and the national defense. The Civil Aeronautics Act is a social document of great significance, as it states continuing social objectives and establishes means to implement its purposes.

In the United States, air transportation is already "big business," employing more than 1,300 airplanes, and nearly 90,000 people and carrying 20,000,000 passengers in 1951. Aircraft manufacturing is third in place among U.S. industries, exceeded only by steel and automobiles. Passenger revenue for the domestic air lines exceeds the total for Pullman travel, the railroad's first-class service. However, Pullman travel remains about the same, and one must conclude that air transportation largely represents the tapping of a new field of patronage.

Safety

Now as to safety. The air line record on its face looks pretty good. In 1930 there were 23 fatalities for every 100 million passenger-miles flown by U.S. domestic air lines. By 1950, this rate had been chopped to 1.2 and seems to stabilize around that figure. The risk is evidently satisfactory to the insurance companies who offer passengers a $5,000 policy for $0.25. To some degree, safety and maintenance of schedules are opposed. To improve schedule keeping, flights are made in bad weather. Faster airplanes will require more elaborate ground facilities, and more precise traffic control if the safety record is to be maintained.

Of all the aids to safe operations under bad weather conditions, the instrument-landing system (I.L.S.) probably has contributed the most. Progress has also been made in the technique of air-traffic control. In 1947, the capacity of a normal airport permitted seven aircraft to land and seven to depart in an hour when visibility was low. Today, under the same conditions, the potential capacity has been increased to 32 arrivals and departures. New and more trustworthy static-free electronic devices should help to smooth out the bad weather congestion at busy airports, but very fast jet-propelled transports are projected which promise to complicate the situation. These high-flying craft cannot be held stacked up in the present manner over an airport, waiting their turn to land. Their fuel supply is quickly used up. Some system of dispatching must co-ordinate departure and arrival times to give a clear right of way.

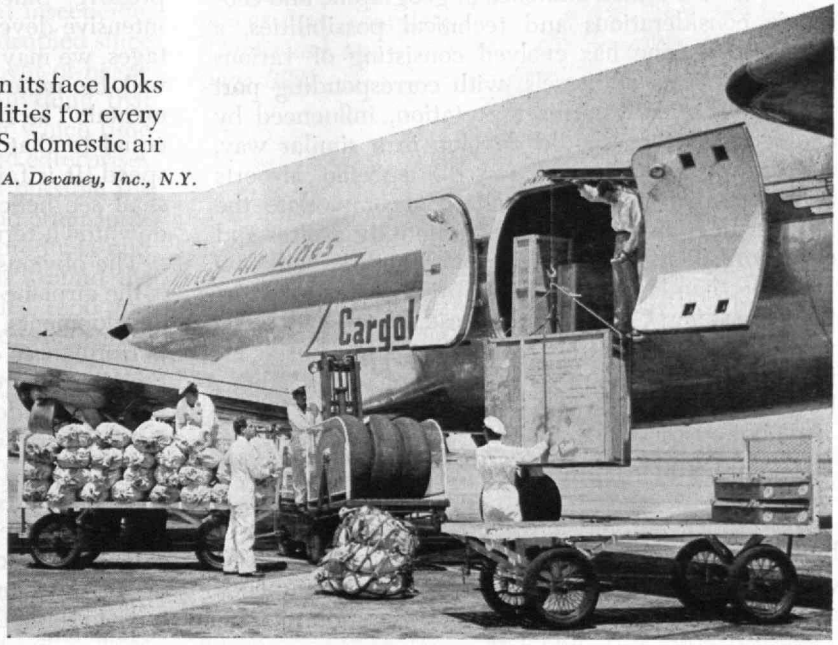
Perhaps it will prove to be both unsafe and impractical to handle all types of air traffic at the same airport. A great city may well have several airports, each organized to handle one kind of traffic.

Airports

It has been reported that more than half of all airplane accidents are associated with take-off and landing operations. This may mean that these operations are too difficult or that our airports need improvement.

One ought to marvel that a normal young man can be hired to launch a 50-ton machine into the air as a routine task, to speed it up to 300 miles an hour, to find his specified destination, and then to bring it down gently to rest. The young man is no genius, but he knows what to do to control a complex apparatus that has evolved from the applied mechanics of the last half century. The work of inventors and engineers is never done, and continually requires that the task of the pilot be made simpler and more straightforward. Airplane, airport, and intercommunications must be adjusted to accomplish the critical function for which they exist, in an art notorious for change.

The growth of air transportation has put a severe strain on many major airports. Original facilities have become outgrown and many airports are approaching saturation. Larger and faster airplanes, making more



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Robert Weichert from A. Devaney, Inc., N.Y.

landings and take-offs in worse weather, will call for longer runways, larger clear-approach areas and a check to community encroachment.

Frequently, the airport has acted as a magnet to attract a surrounding industrial and residential settlement which now is subjected to noise and hazard. A desirable pattern of city growth can be prevented by a busy airport unless it be incorporated into regional and city development plans with the expectation of a useful life, taking into account planned possibilities of expansion, comparable to that of railway terminals.

Can future airplanes be designed to conform to airport limitations and still take full advantage of improvements made possible by technical progress? Research airplanes have recently flown at supersonic speeds at high altitude. They could not have operated from existing airports. It may be many years before the results of such research are applied in air transportation, but future clever designers will try it.

The writer ventures to suggest a parallel with the much older problem of the naval architect. He designs ships which must enter certain harbors and pass through certain canals. Tankers for Persian Gulf oil conform to Suez Canal restrictions on draft.

In the course of time vessels have come to be designed for geography. The great Atlantic liners can enter only a few great ports. World-ranging tramp steamers are designed to enter almost any port. Under the combined influence of geographic and economic considerations and technical possibilities, a merchant marine has evolved consisting of various kinds and sizes of vessels, with corresponding port facilities. Probably air transportation, influenced by analogous factors, should develop in a similar way, with airplanes designed for the specific airports served, and airports designed to accommodate the kind of air transportation the community desires and can afford. The evolution of ground facilities will now lead and then lag behind the requirements of the airplane designer. Change in the basic scheme will come in response to pressures, not continuously, but at infrequent intervals, just as vessels and port facilities have been adjusted to each other over the last century.

Human Factors

In considering safety and accidents, I must not leave human factors out of account. Medical and physiological science have been intensively applied to methods of selection and training of pilots and to their maintenance in good condition. However, there is an inescapable reliance on human judgment and skill. A large proportion of the accidents in recent years could have been prevented by better flying qualities, more reliable engines, better weather forecasting, better lighted runways, or some other improvement in whatever it was that made flight conditions so difficult that the pilot made a mistake. If a task increases in difficulty, errors grow more frequent.

The process of assisting the human pilot by an automatic control system started about 1915 when Lawrence Sperry first demonstrated the gyroscopic pilot of his father, Elmer A. Sperry. This process continues and has reached the stage where autopilots are standard equipment on practically all large airplanes, civil or military. The autopilot replaces the human pilot for routine steering on course and for maintenance of the attitude of the airplane. A recent development combines the autopilot with radio reception devices so that an airplane can be automatically guided along a proper approach path and landed on the runway, in accordance with the airport's radio signals.

Helicopters

The place of the helicopter in air transportation is not yet clear, but its advantage of starting from the backyard, rather than from a distant airport, is impressive. Since the helicopter is just now having intensive development because of its military advantages, we may feel hopeful that most of its handicaps will be removed. These handicaps are not fundamental. The future helicopter could have a pay load equal to that of an airplane designed for the same speed. It is fairly safe to predict that before long we shall see helicopters shuttling between airports and downtown terminals with "bus loads" of passengers.

The obvious vehicle for efficient air transportation is the airplane which, even after 50 years of intensive developments, is ripe for substantial improvements in performance, economy, and safety. The airplane of the Wright brothers has evolved into the modern air transport under the stimulus of practically unlimited funds in two wars and the devotion of the best scientific brains of the age. A new kind of professional man has been added to those who minister to the needs of society, the aeronautical engineer. This engineer designs and builds airplanes to be useful servants in war or peace, plans and operates air transportation systems to serve the public and, in general, focuses in his

professional efforts the results of the advancing technology of his time.

I have spoken of the Air Commerce Act as a social document because it implements a national policy to mold the social impact of a branch of technology. This Act governs civil aeronautics and especially air transportation. Other United States statutes make the application of aeronautics to national defense the function of the Defense Department, and make the State, as represented by the President, undertake responsibility for aeronautical research, to insure that both civil and military aeronautics shall be superior in quality.

The Act establishing the National Advisory Committee for Aeronautics provided a unique example of research in a field of applied science undertaken by the State because of its paramount interest. But the example is no longer unique, since the Congress more recently charged the Atomic Energy Commission with responsibility for research in another field of applied science.

The concern of the State with progress in aeronautics is understandable from the primitive obligation of self-defense, and the public interest certainly justifies the advancement of civil aeronautics which offers the hope of a better world order.

Effects of Air Transportation

It is trite but true to say that air transportation has shrunk the world. Distances are beginning to be thought of in hours rather than in miles. One can fly a third of the way around the world in 30 hours.

Concurrent with the growth of air line operations we have recently seen a mushrooming of miscellaneous aviation enterprises: crop dusting, spraying, power- and pipe-line patrols, surveys, forest-fire fighting and, in general, carrying people and supplies by air on urgent missions. A dramatic example was "Operation Locust" in Iran. A call for help to check a plague of locusts was met by a flight of three transports from the United States to Iran, carrying eight small airplanes with spray equipment, nine pilots, six mechanics, and thirteen tons of a special insecticide.

Air cargo in the United States has quadrupled since 1946 but does not yet handle the movement of heavy goods. It does, however, take almost anything that can be got through an airplane's door for which time in transit is valuable. Air cargo has created enterprises where none existed before. It has made possible the shipment of perishable cargo served by no other form of transport. Daily, a great variety of products and commodities are speeded to destinations around the world – pharmaceuticals, clothing, textiles, food and livestock, radios, films, newspapers and magazines, machine parts, even automobiles.

There has also been a mingling of people due to ease of transportation and communication. People are mobile and become migratory in times of economic dislocation. With the international mobility afforded by air transportation, frontiers of nationality should be less of a barrier.

Short-haul air transportation has yet to be developed, but it conceivably could extend the daily commuting distance well beyond 50 miles. While more than half of the U.S. population is now urban, the next generation should see this figure reduced. There are already signs of serious decay in the central residence areas of large cities like Boston and Cleveland.

The influence of air transportation on business extends beyond the convenience of buyers and sellers. It facilitates the central management of widely scattered enterprises. There is already a trend away from giant industrial centers. This should favor the growth of the smaller towns.

Air transportation, as competitive private enterprise, is developing under the pressure of technological progress, stimulated by the State and yet regulated by the State. There are two groups of planners in the United States – the managers of the air lines, and the Civil Aeronautics Board in Washington. Both realize that the public wants to go faster, that there is a relation between speed and safety, and that the air transportation system is now vital to the nation's commerce and security.

Planners are always in trouble from past mistakes and future uncertainties. No major industry has ever progressed so rapidly as air transportation nor expanded so fast. But the industry has not reached maturity and must find its way through a maze of economic and technical difficulties. It must make correct decisions about changes it cannot now afford, and about a future only dimly foreseen.

The Airspace and National Sovereignty

The development of world-wide air transportation creates legal problems without precedent in international law. The legal concept of sovereignty above the surface of the earth is older than human flight. The Romans kept open by law the airspace above public highways and sacred ground.

The foundation of present international air law is the Paris Convention of 1919, part of the Versailles Treaty, which stated that "the High Contracting Parties recognize that every power has complete

(Continued on page 338)

U.S. Air Force

Science and Religion

The Association of Good Morals and Progress Assures That World Morals Will Steadily Improve

By H. B. PHILLIPS

To motivate human conduct it is necessary to make assumptions concerning the universe as a whole for which it is not now possible, and may never be possible, to give completely logical support. These assumptions, or beliefs, constitute a form of religion.

Since the time of Descartes, for example, most scientists have believed that nature is subject to invariable physical laws and that these laws are never suspended. One might think this proved by experience. But the mere fact that exceptions have not been observed does not prove that none will be. Many happenings, now a part of everyday life, never occurred before the writer was born. Thus belief in the invariance of physical laws is not so much a result of experience as a first principle in a scientist's religion.

The importance of this principle cannot be overemphasized. There is little reason to think that human abilities have changed appreciably for thousands of years. Yet during each generation, now, the advance made in man's control over nature is comparable to that made during all preceding history. An important reason for this is quite clear. When natural phenomena were thought to express merely the emotional states of various gods, there was little impetus to seek a rational explanation. Under such conditions even geniuses were inhibited from noting correlations that would now be obvious to a schoolboy But belief in the invariance of physical laws is only a static part of a scientist's religion. To this, during the last few centuries, has been added a dynamic phase, mainly a belief in the perpetual advance of the highest forms of life. Conditions on earth may ultimately become such that organic life cannot continue, but that time is certainly millions, perhaps billions, of years in the future. To man, whose significant history extends backward only a few thousand years, a million years may be considered to be effectively infinite. During that time it may be reasonably assumed that the evolutionary advance, which has now continued for more than a billion years, will not be interrupted. This does not mean that the advance will necessarily be continuous. There may be alternate advance and recession, but the average gain during the forward movements will more than compensate the loss during the recessions.

This process has now reached a critical stage. Through increasing knowledge, man is becoming able to influence the process consciously. Good and evil have thus been introduced into the world. Good is that which accelerates progress; evil is that which retards progress.*

This definition of good requires the ordinary benevolent acts of conventional morality since the performance of such acts promotes progress. It is also valid when the conventional rules fail. Consider, for example, a backward community where people are all good neighbors and there is practically no crime, but because of unsanitary living conditions and primitive technology the people have poor health, work very hard, and on the average die at about 30 years of age. Compare this with a modern city where every form of crime is a daily occurrence, but because of more modern medical service and improved methods of doing work the people have excellent health, short hours of labor, and on the average live happily to the age of 70. To the person who dies, the principal difference between death from disease and a knife thrust is that the knife thrust is usually less painful. To call the morals of the primitive community superior to those of the city is then to make virtues of suffering, severe labor, and early death. The purpose of good morals is to reduce these things. Any worthwhile system of morals must therefore provide progress, and if the rate of progress is greatest, the other desirable features will automatically be included.

This association of good morals and progress ensures that world morals will steadily improve. That such has been true in the past is obvious from even a slight inspection of history. For example, Marcus Aurelius is usually considered one of the best Roman emperors. Yet Marcus persecuted the Christians about as much as Hitler did the Jews. The best Roman emperor was thus only about as good as the worst public leader of our times. That this improvement should continue follows, since those who lead in morals do most for progress, and each advance in progress increases the power of those who make the advance. Thus right makes might and so automatically prevails.

This principle is, however, subject to one limitation. The consequences of human conduct are often only statistically determined. In such cases the statement should be, right nearly always makes might. Since the time of Job, religious leaders have been puzzled by the fact that some individuals of the highest

(*Continued on page 334*)

* H. B. Phillips, "On The Nature of Progress," *American Scientist*, 33:256 (October, 1945).

Lecomte du Noüy, *Human Destiny*, page 133 (New York: Longmans, Green and Company, 1947).

AN M.I.T. ENTERPRISE IN Occupational Health

Research, Occupational Medical, and Educational Services Are Combined to Safeguard the Health of Persons Working in a Technological Environment

By HARRIET L. HARDY

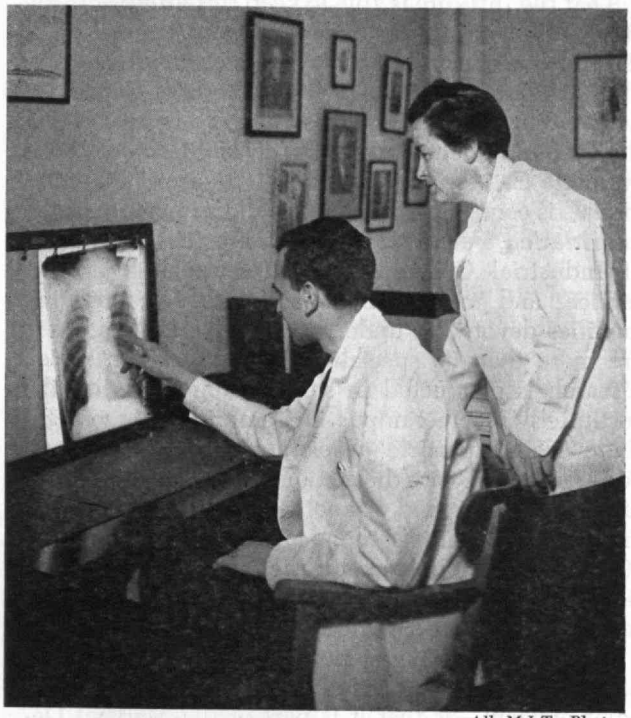
SURELY there can be no greater satisfaction in life than to feel that one's work fills a real need. Those of us serving in the Occupational Medical Service of the M.I.T. Medical Department have this agreeable reaction to our work. As far as is known, neither in this country nor abroad, has any other educational institution a technically skilled staff as part of its medical group and specifically charged with devoting its energies to the prevention of: (1) harmful occupational stress in general, and (2) specific occupational disease arising from exposure to dangerous dusts, toxic chemicals, and excess ionizing radiation.

There are very good reasons why a technical institution of higher learning should take a leading part in creating and promoting programs intended to foster worker health, and minimize – if it cannot eliminate – those occupational hazards resulting from progress in technology. Of course it is good policy to establish and maintain attractive and healthful working conditions, and obviously humanitarian aspects become major considerations in any such program. But considerations of humanitarianism and good business practices appeal as strongly to administrators of industrial plants and research organizations as to presidents and deans of colleges and universities. What gives institutions of higher learning their unusual opportunity, as well as their responsibility, to play a pioneering role in occupational medical service is their unique combination of intimate contact with potential technological hazards at the forefront of knowledge in the physical sciences, coupled with an alert medical program in an educational environment.

All three services – research, occupational medical, and educational – are legs of the tripod supporting the health of the populace in a technological society. Without research, the hazards of technological occupations can hardly be studied intimately from first-hand experience. Adequate medical service with means for preventing and minimizing occupational hazards (or correcting their effects, if necessary) will promote the health of individuals with due regard to all pertinent aspects of hygiene. Without the proper educational environment, the lessons of past experience cannot be effectively utilized, especially among students who will later assume responsible positions in industry. Finally, all three of these essential services must be properly integrated if tragedies are to be avoided, such as those in the 1930's when radium poisoning afflicted women painting clock dials.

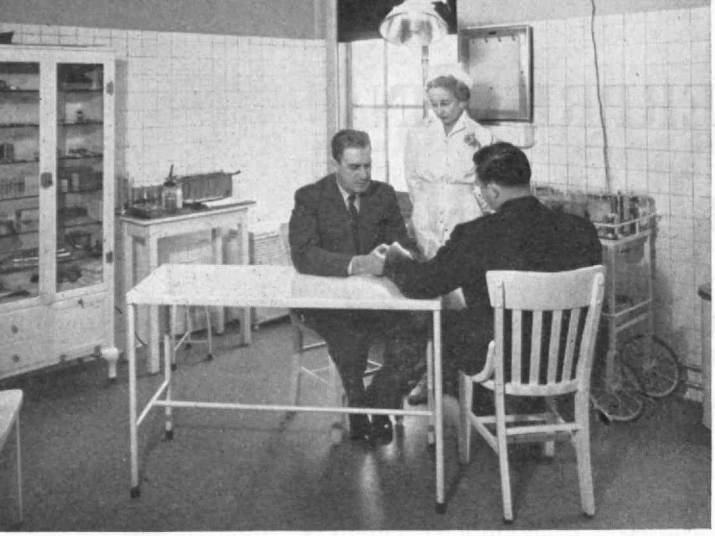
In 1946, the activities of the Medical Department of M.I.T. were expanded to meet the Institute's needs for its growing personnel and intensified research programs. The Institute's wartime experience (including research for the Chemical Warfare Service, and medical and industrial uses of radioactive materials) gave clear indication that occupational hazards due to harmful dusts, toxic fumes, and radiation could be expected to assume increasing industrial importance. Accordingly, in 1947, the Institute acquired the full-time services of a physicist and the consultation aid of a physician to safeguard the health of students, Faculty members, and research teams working with radioactive materials.

Special hazards in research work at M.I.T. called for additional medical and engineering assistance in 1947–1948. By the spring of 1949, the work in this field had become of such importance that a program on the preventative aspects of occupational medicine was developed with an assistant director of the Medical Department in charge.



All M.I.T. Photos

Dr. Harriet L. Hardy, Assistant Medical Director in charge of the Occupational Medical Service, and Dr. Martin Lubin, '48, a physician of the Medical Department, study the chest x-ray film of a worker once exposed to harmful dust.



Dr. John W. Chamberlain, '28, Associate Medical Director and Surgeon, and Miss Alice M. Browne examine the chemical burn on the hand of a research worker.

At the present time the M.I.T. Occupational Medical Service employs: one full-time physician as Assistant Medical Director in charge of this service; one part-time physician trained in biophysics; one part-time physician trained in toxicology; one full-time physicist as Radiological Safety Officer; one full-time industrial hygiene engineer; and one full-time industrial hygiene chemist. In addition, important supporting services are supplied by an electronics engineer, and assistant radiological officer, four assistants in routine radiation protection, two part-time undergraduate students who conduct laboratory and library activities, and an executive secretary, who keeps this group running well by exercise of tact and knowledge of the many departments and laboratories making up the intricate network of M.I.T. educational and research activities.

That the Institute is able to keep this group actively at work on interesting problems may be easily inferred when one considers the size and scope of M.I.T. interests. Institute personnel totals about 10,000, of whom about half are students, with roughly 1,000 in the Graduate School and in each of the four undergraduate classes. The remaining group of 5,000 individuals is comprised of members of the Institute's Administration, Faculty, research groups in the Division of Industrial Coöperation, and secretarial, library, service, and maintenance personnel. Not counting facilities devoted to undergraduate instruction, there are more than 60 specialized laboratories in which research is conducted in some 40 buildings on the Institute's 60-acre campus in Cambridge. At present there are 11 particle accelerators in operation, in addition to 25 x-ray diffraction units – all producing radiation of one kind or another. In addition, 39 laboratories used radioisotopes in their research during 1952. Constant vigilance on the part of the Occupational Medical Service, however, assures that such facilities are operated with safety to personnel.

One of the striking features of the Occupational Medical Service – especially from an administrative point of view – is that it is part of the Medical Department. Several valuable advantages come from administering the Occupational Medical Service as part of the Medical Department. In the first place, all the assets of the M.I.T. Medical Department become available to the working individual; the surgeon is available for care of burns of the student who may have an accidental laboratory spill, or the dermatologist can give treatment for the chemically caused rash of the research worker subject to unusual toxic exposures. Moreover, by mutual exchange of knowledge, the Occupational Medical Service and the Medical Department develop proper medical examinations involving chest x-rays or blood counts as needed for potentially hazardous work, or may give specialized information to the ophthalmologist in such an episode as the exposure of the eyes to certain levels of radiation. Because it is part of the Medical Department, the recommendations of Occupational Medical Service – such as changes in ventilation equipment or operating procedures – are made purely on a health basis. The Occupational Medical Service has not, and does not want, coercive powers in enforcing recommended changes in work practice at M.I.T. Recommendations, with the detailed reasons for the suggestions, are made to the individual or group concerned by the man in charge. If the problem involves dangerous exposure or great change in current procedure and equipment, the Occupational Medical Service may work out corrective measures with Dr. Dana L. Farnsworth, the Institute Medical Director, and members of the Administration, if necessary, after consultation with the Institute staff involved.

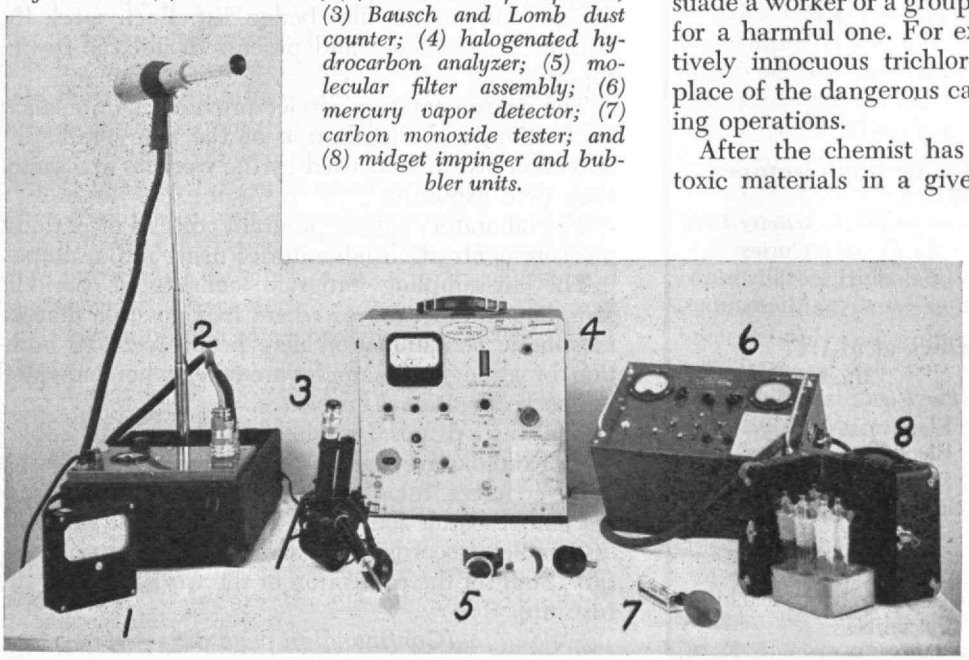
Before describing in some detail the day-by-day work of the Occupational Medical Service, it may be worth while to indicate the location of this Service among the M.I.T. buildings, and to outline the equipment which is available. The four main offices, together with the industrial hygiene laboratory and the counting room, are on the second floor of the Homberg Infirmary. The Infirmary has excellent medical facilities and is centrally located with respect to Institute buildings. Because of their physical proximity, the relationship between the Occupational Medical Service and the Medical Department is direct and simple. Wards previously used could be made available because of the remarkable decrease which has taken place in the last few years at M.I.T. (as in most institutions) in the time sick students spend in bed. There are two doctors' offices, a main office for reception, the library and files, and a large office for the desks of the industrial hygiene engineer and physicist with adjoining storage space for equipment. In the latter office is a microfilm library pertinent to the field of industrial toxicology. This is supplemented by current periodicals. The largest room is the industrial hygiene laboratory with conventional hood, benches, and an adjoining glassed-in office for the chemist.

In addition, an airtight fume chamber has been built into the laboratory for instrument calibration and special studies involving toxic materials. Its total capacity is 10 cubic meters, and it is equipped with an exhaust fan and water with drainage, so that the chamber can be easily cleaned. The industrial hygiene laboratory is adequately provided with equipment especially designed for the measurement of toxic materials in air. Of especial interest are a portable mercury vapor detector, a meter for determining the

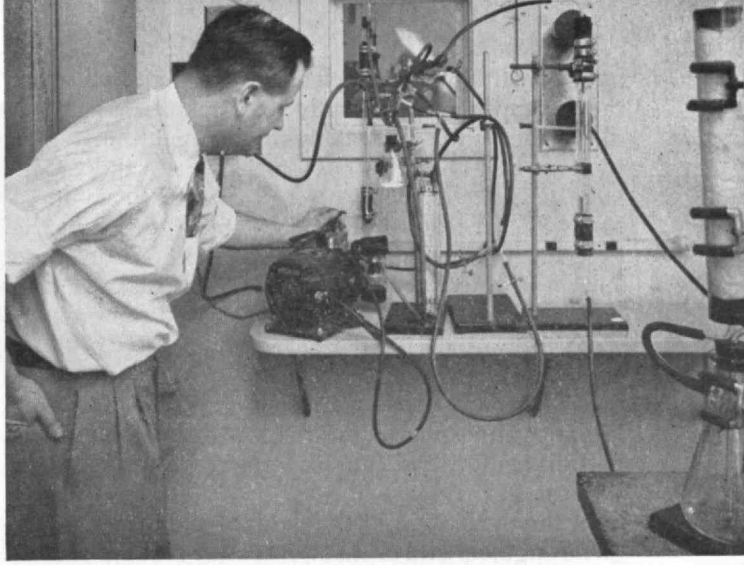
amount of halogenated gases and vapors in air, a combustible gas indicator, and direct-reading instruments for such toxic materials as hydrogen sulfide, carbon monoxide and benzene. When laboratory analysis is necessary, because of the nature of the toxic material involved, various types of air-sampling equipment are available, such as filters, electrostatic precipitators, absorbers, bubblers and, of course, pumps and various air-metering devices. Finally, on this floor there is an air-conditioned room where equipment for radiation counting is used. The equipment consists of end-window Geiger-Müller counter apparatus and proportional counters.

Because the work with high-energy equipment is located at some distance from the Infirmary, the Radiological Safety Office is in a separate building. In this office are the headquarters of those members of the group who develop film badges used as protective devices, calibrate instruments for measuring radiation, and keep records of radiation levels throughout the Institute. The Institute has built a cement igloo (10′ x 10′ x 10′ with walls of poured concrete six inches thick, explosion-proof lights and an air-driven ventilation duct) equipped with facilities for handling and storing radioactive wastes for ultimate sea disposal.

Always, but especially in the current research activity of the lively, curious membership of the M.I.T. staff, several skills are essential to provide correct advice on the prevention of hazardous exposures. Knowledge of the literature, skill in the use of measuring techniques, and experience with personal and engineering protective devices, which may be used in the daily life of the Institute, are among the skills made available to Technology personnel. The range of services rendered by Occupational Medical Service extends from work to insure safe handling of the potentially dangerous H_2S in freshman chemistry classes to acquired knowledge of the biological behavior of germanium compounds which have recently become so important in electronic research.



Equipment frequently used in the Industrial Hygiene Laboratory includes: (1) air velometer; (2) electrostatic precipitator; (3) Bausch and Lomb dust counter; (4) halogenated hydrocarbon analyzer; (5) molecular filter assembly; (6) mercury vapor detector; (7) carbon monoxide tester; and (8) midget impinger and bubbler units.



Engaged in aerosol-collection studies is Frederick J. Viles, Jr., '38, industrial hygiene engineer, shown here observing experiment in the dust chamber of Occupational Medical Service.

The unusual and routine activities may be illustrated by a few concrete examples of the nature of the Occupational Medical Service work. The industrial hygiene chemist makes trips to various parts of the Institute to investigate reports of use of toxic chemicals or harmful dusts, and the atmosphere in which the individual is working and breathing may be measured directly. The following materials are most frequently measured: mercury, carbon monoxide, benzene, carbon disulfide, beryllium, chlorinated hydrocarbons and, on occasion, oxides of nitrogen, ether and lead. Certain solvents used as paint removers, or typewriter or metal cleaners, may be analyzed for toxic components. The chemist may have to spend considerable time developing methods of analysis for toxic materials not previously encountered, and is often called upon to do original work on various phases of the problems of collecting and sampling of such materials. Alone, or after consultation with the literature and the rest of the staff of the Occupational Medical Service, the chemist may try to persuade a worker or a group to substitute a safe material for a harmful one. For example, the use of the relatively innocuous trichlorethylene may be urged in place of the dangerous carbon tetrachloride in cleaning operations.

After the chemist has measured the air levels of toxic materials in a given operation, the industrial hygiene engineer will bring his skills to the problem of altering the procedure or developing ventilation that will protect the worker from harmful exposure. The engineer may have to design local exhaust or general ventilation equipment which includes or takes responsibility for hood design, duct layout, and fan and air-cleaner selection in

new construction. Air cleaners are required when radioisotopes and unusually toxic materials are handled. The ventilation of highly flammable materials, such as ether and other combustible gases and vapors, have presented complicated problems. In co-operation with the Institute Safety Engineer, the industrial hygiene engineer provides consultation on correct selection of respirators, appropriate gas masks, and air lines or self-contained breathing apparatus, as may be most appropriate for the character of the work. The engineer gives advice throughout the Institute on problems of occupational stress involved in correct lighting, atmospheric pollution in the neighborhood, and discomfort and fatigue from environmental conditions.

In the evaluation of the work of the industrial hygiene engineer and chemist, it is clear that the chemist must indicate to the engineer where corrective ventilation and protection devices are needed by measuring air levels of toxic materials. The engineer then provides solutions and helps to execute necessary changes which are reviewed by the chemist to be certain of their adequacy. These facts are stressed to emphasize the dependency of one skill on another in prevention of worker injury.

There is considerable interest in basic and applied research involving radioactivity at M.I.T. This may be easily inferred from the table indicating the extent of radiation sources at M.I.T. The principal activities of the Radiological Safety Group can be divided into two categories – advisory and services.

Radiation Sources and Distribution, M.I.T.

Radioisotope Shipments from Atomic Energy Commission
(January-December 8, 1952)

Department	*Number of Shipments*	*Total Activity (in millicuries)*
Sanitary Engineering	25	232
Metallurgy	18	58
Physics	6	152
Chemistry	5	70
Biology	1	1
	55	513

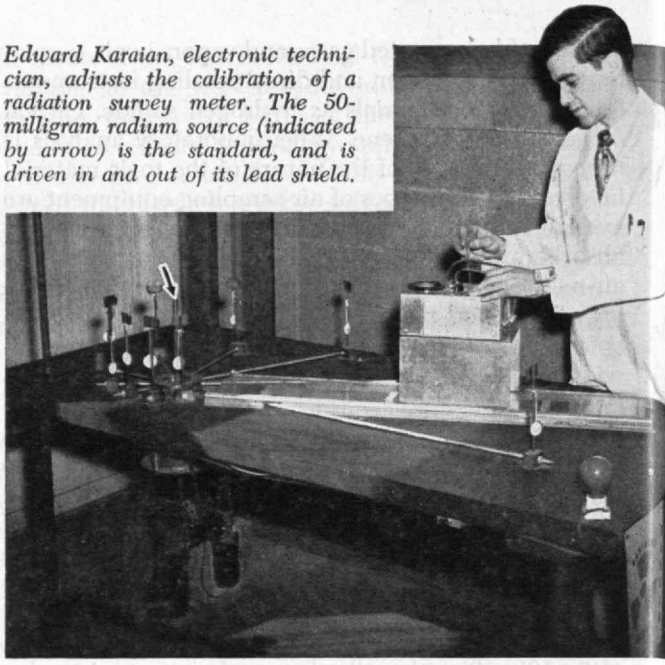
M.I.T. Laboratories Using Radioisotopes
(1952)

Number of Laboratories	*Activity Used*
2	Curies
12	Millicuries
25	Microcuries

Particle Accelerators at M.I.T.

Type	*Particle*	*Maximum Energy (Mev)*
Synchrotron	Electron	300
Linear Accelerator	Electron	30
Cyclotron	Deuteron	15
Generators (8 Van de Graaff)	Electron, Proton, Deuteron	1 to 12

Among other types of radiation-producing machines at M.I.T. are 25 x-ray diffraction units.



Edward Karaian, electronic technician, adjusts the calibration of a radiation survey meter. The 50-milligram radium source (indicated by arrow) is the standard, and is driven in and out of its lead shield.

The advisory phase is intended to insure that adequate consideration is given to radiological safety during the planning stages of an experiment. It is found that procurement and safe handling of radioisotopes and laboratory design are usually the areas in which safety advice is needed. An important point is that the Institute policy for the procurement of isotopes requires that all requests are approved by the Radiological Safety Officer. This requirement provides for the necessary advance notification to allow adequate time for a review of plans and a discussion of the problems.

The service category is concerned with the film badge program, instrumentation, laboratory survey, air sampling, waste disposal, and records. The service phase is intended to insure that the radiation workers' exposure is kept within permissible limits.

The film badge program provides continuous measurement and recording of personnel exposure to external radiation. At present there are approximately 300 persons on the film badge list. Each week the badges are collected and processed and the results reported.

The instrumentation service provides maintenance, calibration, and distribution of the many radiation detection instruments used by the workers to monitor their own exposure.

The laboratory survey program consists of periodic measurements at all laboratories using radioisotopes.

The air-sampling program consists of periodic sampling in laboratories where it is possible that atmospheric contamination may be evolved. In addition, breathing zone samples are taken when indicated to check operational exposures.

The waste disposal service provides for: (1) collection of radioactive wastes; (2) storage of such wastes in the concrete "igloo" (remote from operating personnel and research activities); and (3) proper disposal.

Complete records of personnel exposure are necessary, both for the protection of the worker and of the Institute.

(Continued on page 328)

Raymond E. Hanson

Project Glacier

By E. H. CAMERON

Our typical forebear who settled New England was a Jack-of-all-trades, each of which he mastered to a working degree of proficiency. He had to, to survive. His primary vocation was that of an agriculturist – he was a farmer. Even at the late date of our first census (1790),*[1] as many as 19 out of 20 Americans lived in rural communities.[2] Many of them lived in the regions where, aeons earlier, the great ice sheet that had capped much of the Northern Hemisphere had left its glacial mark. The glacial area in America was bounded[3] on the south by a line stretching from Manhattan Island to the Ohio River, and extending to the southerly section of the Missouri River. In New England the rocky, glacial record is the most pronounced. Because of this, the Yankee settler, after his tree chopping, stump removal, and brush burning, found that he faced still another task before planting and cultivation could start.

Except in the alluvial meadows, where Mother Nature had graciously deposited layers of rich loam, he had further to process his soil before he could plant it. There were the glacial stones – great rocks that had to be plowed around; two-man and one-man boulders that he and the older sons had to dispose of; and the smaller stones for the boys to pick out of the otherwise fertile soil. The boys knew that they could never win at this boy-chore; stones seemed to grow just as speedily as corn, wheat, or rye, for the spring plowing would turn up another crop of stones in the field they had faithfully cleared a season earlier. The boys would be taught that the Biblical parable of the sower said that "stony places"[4] were bad for growing things. They might get a more striking lesson, too, when their father would break his crude hoe or plow on a rock they had missed, for father's farming tools were not rugged. Because of the scarcity of iron and the high cost of imported tools, he had to make most of his agricultural implements himself – largely out of wood.

At the start, his hoe might have been the shoulder blade of a moose, bear, or deer,[5] strapped to a wooden pole – a trick he had learned from the Indians – and he had no plow. In the year 1637, all Massachusetts owned only 37 plows, and when plows became more common, they were neighborhood affairs, owned by a man who would be given a town bounty[6] to go from farm to farm to perform the plowing and who would charge the owner of the farm for the service. The share of his plow was of precious wrought iron, hung in crude fashion from the wooden beam above. Its mouldboard, for turning the share-cut earth into furrows, was well named, for it was literally made of boards – oak, hickory, or pine. Occasionally, the mouldboard was sheathed with scraps of old saw plate, or sheet iron.[6] The early American plow was thus a weak device, and it is significant that, before he could collect his bounty, the plowman had to prove his ability to keep his plow in repair. Therefore, stones, large and small, had to be cleared from the fields before plowing could start. So our ancestor, necessarily alert for ways to save time and muscular effort in his arduous program of living, decided to kill two birds with one stone – or, rather, many stones.

His own ancestors, who had settled Plymouth, had started under a planned community arrangement[7] that closely fits the definition of modern communism. Held to this arrangement by their agreement with the merchant adventurers who financed them, the Pilgrims found communal living very irksome, and soon devised ways to modify it, to allow each family to have its own farm and to benefit from the profits therefrom.[8] Thus, from the beginning, the New England settlers not only liked to have deeds to define the titles to their lands, but to have visible signs of ownership.†[9] The stone wall was the answer. The rocks would be loaded on a drag, probably made of stout saplings, fastened together with rope or by hickory pegs. The drag would be drawn between stumps and projecting ledge outcrops by oxen with crudely shaped wooden yokes, or perhaps, by horses with hemp, flax, or, in rare cases, leather harness. The boulders from the fields were transported thus to the property line. Rich landowners might have the line laid out by a surveyor, with his rather inaccurate compass; probably more often, the line would be located by a "foot-and-eye" survey. Then, the hard work of building the stone wall began, and a modern poet has aptly appraised the physical energy involved in this operation – "If ye only knew the backaches in an old stun' wall."‡ Primarily a farmer, our ancestor added the new trade of stonemason to his incidental trades of textile worker (processing the flax and wool from which his wife would spin and weave the linsey-

*[1] Please see numbered references at end of article, page 321.

† Deeds exhibited in Pilgrim Hall, Plymouth, date from 1644 on.

‡ Holman Day, *An Old Stun' Wall.*

woolsey for clothing); woodworker (operating his shingle-"frow," and two-man pit saw);[10] carpenter, saltmaker, cooper, and fisherman.

Almost anywhere he scratched the surface soil – the organic material of rotted vegetation deposited in the millenniums since the glacial era – our forebear struck stones. They were good stones, which had endured for many centuries the destructive forces of erosion, and the rupturing stresses caused by temperature changes. Removed from the soil so that cultivation could start, they made stout stone walls along lot lines, highways, and lanes; and encompassed many gardens, graveyards, and pastures. There were stones left over for cellar walls, survey merestones, crude arches over gullies, well linings, horseblocks, and bridge abutments, in this period of settlement, when the usual masonry structure was adapted to fit the uncut, unfinished stones that were available. Structures constructed of stones cut to specific dimensions were comparatively rare.

We must ask the geologist whence came all these stones. He will tell us, briefly, that in the latest of the epochs of geological time (the Pleistocene epoch)[11] a period of low temperature ensued, which encased most of the northerly parts of the earth with an icecap, often of mountainous height. Below the snow line, in the summer months, the ice would partially melt and glaciers would drift down the valleys, southerly, at velocities of a few inches or a few feet per day, according to local conditions. The movement of glaciers, hundreds of feet high, was of tremendous momentum, and in their path the glaciers would pluck off projecting ledges from mountains, and would thus carry enormous volumes of debris – rocks, and eroded sands. The top moraine would be of angular rocks with rounded corners. Rocks at the bottom, rolled for hundreds of miles through the long centuries, would become somewhat spherical (fieldstones) by the time they were finally deposited in the terminal moraine at the southerly end of the glacier. A valuable by-product of these processes of erosion and abrasion was the huge tonnage of sand that the glacier deposited.

The settler thus had a wide assortment of stones to pick from as he built his stone walls. As a stonemason his task was to build a structure of "dry masonry"; that is, his wall had to be an assembly of stones which must be stable, without the aid of mortar to fill the voids caused by the irregular shapes of the stones from which he had to choose. He became both artisan and engineer, having to supplement his manual dexterity and strength with the intelligence that told him how to place his stones. He was an engineer in embryo, of course, and he would call his decision not to waste much time on the bearing value of the foundation of his wall a matter of common sense. He might scrape off a few inches of topsoil and throw it into the field that the wall was to surround, for good growing soil was scarce.

He worried little about the frost line. If his wall settled a bit, and a precariously balanced top stone rolled off, he could easily replace it the next spring. He would place the heavier stones at the bottom, in the area he had scraped of topsoil – it was easier that way. By trial and error in the building of his first stone wall, he would learn that the ratio of the base width to the height of his wall was important. Tall walls called for wider bases. Common sense also solved the problem of stability – the keeping of the resultant of the vertical and horizontal loads safely within the base – without benefit of vector diagrams. In fact, the horizontal forces were incidental – they could result from the impact of a lusty bull or stallion that might try to leap over the wall occasionally, or from the disturbance of a clumsy bear that would try to scale it. If the beast failed in his attempt, an incipient failure by shear would be indicated; except that the top stone would exercise its right to overcome rolling friction and topple off, and the stability of the wall would not suffer. Well-bedded, base stones of suitable width were a prime requisite.

Stones of more or less parallel "bed" and "build" were at a premium. Not only would they stay put themselves, but they would assist the upper stone to remain in position. The too numerous, rounded field stones were not popular, but the builder would learn, by the principles of balance and friction, to make the stones of his wall mutually sustaining. It was obvious that a vertical joint in an upper course must not align with that of a lower one; that is, the joints must be "staggered." It was also clever to tuck the rounded end of a stone against an adjacent stone which, luckily, had an overhang; that is, joints should be "keyed" wherever practicable.

The schedule of progress of the wall-building ancestor was uncertain. There would be interruptions: a bear, tracked in the vicinity, demanded investigation; the sudden warning that Indians were near called for the corralling of family and beasts in the palisade-guarded fort. Indians were not interested in stone walls. A modern historian has unearthed the information that one rod of stone wall per day was average progress for a team of two men and a yoke of oxen.§ This information is obviously too conservative. At this rate, the construction of the boundary and incidental walls of an average New England farm might require years of the time of a settler and his oldest son. Time was too important, and the walls required for the farm would weigh only a few thousand tons – an easy burden for our stout ancestor.

The maintenance of his stone walls was a routine, spring operation of our forebear, before his neat cattle could be released to the pasture from their long, winter sojourn in the barn. Especially in sections near a brook, where the subsoil might hold water, the alternate freezing and thawing of the soil beneath would disturb the fine balance of stone-on-stone; and repairs to the wall and improvements on its original design would be necessary. Crevasses between stones in other wall locations might become filled with soil that would hold water and freeze, heaving the stones above. A son might have pried loose a stone, critical to the wall's balance, to allow his dog to get at a woodchuck. Many things could happen, which made it prudent to mend the walls periodically. Withal they were stout stone walls, which would last for centuries.

§ Haydn S. Pearson, "New England's Stone Walls Are Going!" *The Rural New Yorker,* September 16, 1950.

We can picture the pride of creation of the builder when a wall was finished. He would walk to its end and sight along its rounded top. Except for the brownish color, characteristic of rocks that have recently been unearthed, it would look like it had been built at the same time the adjoining gray, weathered stone wall had been built. It would be in good alignment as to line and grade. Its construction was an art, which had required strong muscles and skill — an art now almost forgotten. The settler would nurse his back muscles and hope that he was not developing a crick, from which so many of the older men of his generation of hard workers suffered. "It is my wall," he would say, "and mine are the fields that it encompasses."

With thousands of his fellows, he had given glacial New England a most durable record of the stamina of the forebears who settled it. Unless the modern agricultural trend succeeds in dooming the walls, because of the increased efficiency of the larger fields that their removal would provide,‖ our stone walls will continue to be one of our most valuable heritages. The archaeologists of the future will study the traces of our walls, and ponder. Humble in their cross-sectional dimensions of width and height, their linear dimension is tremendous. The aggregate length of the stone walls of New England has been estimated at 500,000 miles![#]

If they are astute, the archaeologists will recognize the stone walls as artifacts of the first stage of civilized American culture that succeeded the semibarbaric culture of the American Indian. They will deduce that, like the Indians, the American settlers built their structures largely by man power, and will pay tribute to the physical stamina of the builders.

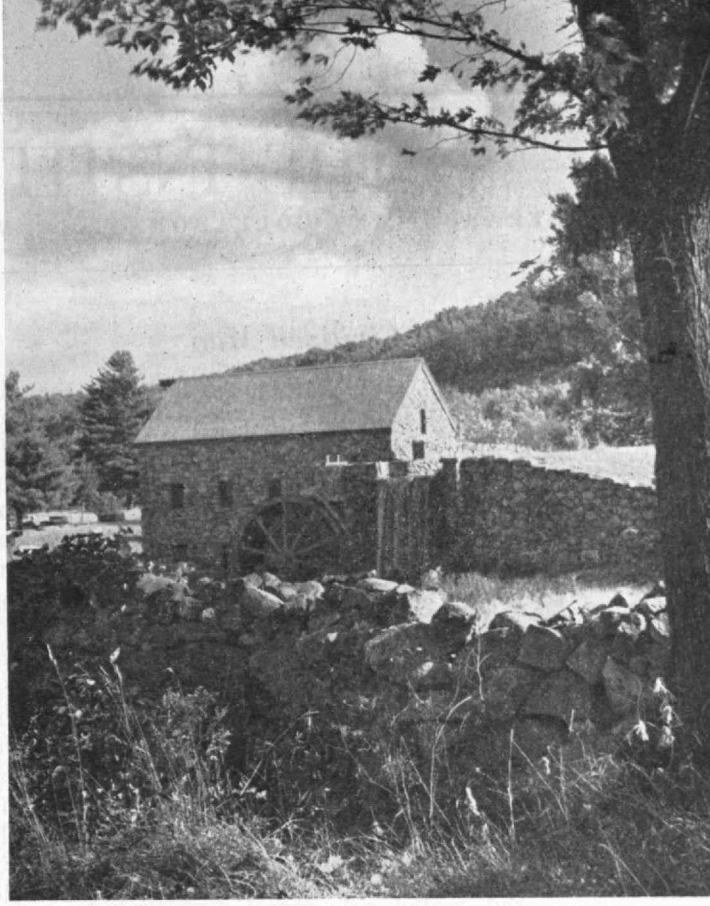
Following through with their research, the archaeologists will select, as the most impressive relics of the succeeding stage of American culture, the long tangents and geometric curves of our railroad cuts and embankments. That vastly more than human energy was required to move the huge quantities of sand, gravel, and hardpan such long distances for railroad cut and fill will be obvious to the archaeologists; and they will find evidence that animal power was beginning to be replaced by steam power in the era of railroad development.

The outstanding evidence of the third stage of structural development, of course, will be our modern, mammoth power dams, constructed either of earth or concrete. Happily, the archaeologists will find strange devices of this period of ponderous construction equipment, driven by crude (to them) machines termed electric motors and internal combustion engines.

The archaeologists will note the vastly improved efficiency of the still ancient devices that followed — all driven by the subtle power released by atomic fission. (New to us of 1953, atomic power will be old stuff to them.) These devices, too, will appear crude as they compare them with the ultraefficient means of construction in their own generation many centuries in our future.

‖ *See also,* "Hedgerow Trees," in *The Field, April* 19, 1952, London, England. This article deplores the uprooting of the English hedgerow trees, in a similar trend for "efficiency and mechanisation.

Editorial in Boston *Herald,* August 31, 1952.



Raymond E. Hanson

The grist mill at Sudbury, Mass., shows that natural stone was used for structures other than fences.

Reviewing their research through the millenniums, they will probably grant the highest accolade to those who started the chain reaction of American construction progress with their man-made stone walls and equally impressive contemporary structures. In their undeveloped country, our ancestors' determination to survive adequately overcame the deficiencies of their working tools whereby they got clothing, shelter, and enough to eat.

From the celestial area, reserved for those who built the enduring stone walls of New England, our forebear will observe the efforts of future students to understand them, and he will smile. "I just built those stone walls so that I and my working family could grow enough to eat," he will say. "True, we had to mend them every spring before we could put the cows out to pasture. But I used to read my Bible, and I know that my walls did not fall down, like the Walls of Jericho, which fell down seven days after they were attacked. Some folks, they say, got a tax abatement for clearing land, measured by the rods of stone walls they had built. We just got the fun of building ours — I and my strong sons."[12]

References

1. *Historical Statistics of the United States, 1789-1945,* page 25 (U.S. Department of Commerce, Bureau of the Census, 1949). In 1790 the rural population was 3,727,559, and the urban, 201,655 — a total of 3,929,214.

2. *Ibid.,* page 16. "Urban" was defined as incorporated places over 2,500 population.

(*Concluded on page 336*)

THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

Science and Civilized Man

JACOB BRONOWSKI, distinguished British scientist and man of letters, has been appointed Carnegie Visiting Professor of History at M.I.T. for the spring term. A noted exponent of scientific humanism. Dr. Bronowski will offer courses on the philosophy and history of science from this point of view in the School of Humanities and Social Studies. While at the Institute he will also give three public lectures on this theme, entitled "Science and the Civilized Man."

Polish born and English trained, Dr. Bronowski has an unusual combination of scientific and literary interests. He took first honors in mathematics at the University of Cambridge in 1930, and received the degrees of master of arts and doctor of philosophy there in 1933. He has published numerous papers in algebraic geometry and topology, and more recently in mathematical statistics. Since leaving university teaching in 1942 for wartime research, he has held government posts of increasing responsibility.

Dr. Bronowski has written two widely known books on literature: *William Blake: A Man Without A Mask* and *The Poet's Defence*. He is well known for his radio talks and dramas, one of which recently won the Italia Prize as the best dramatic work broadcast in Europe in 1950 and 1951. His most recent book, *The Common Sense of Science*, reinterprets the development of scientific ideas in terms of scientific humanism. He is planning a sequel to this book.

Biologist Honored

FRANCIS O. SCHMITT, Head of the Department of Biology at M.I.T., is one of 49 distinguished scientists who have been elected to Fellowship in the New York Academy of Sciences. Dr. Schmitt had been nominated to Fellowship by the Council of the Academy in recognition of his outstanding scientific achievements.

Internationally recognized as a leader in modern biological research, Dr. Schmitt has utilized the x-ray, polarized light, the electron microscope, and other tools and techniques of experimental physics in fundamental biological research.

He is especially noted for his research on tissue metabolism, the chemistry and physiology of nerves and connective tissue, ultrasonic radiation, surface phenomena, mono and multifilms, analysis of molecular ultrastructure of nerves and tissue cells by x-ray diffraction, polarized light and light-reflection methods, and research with the electron microscope.

The New York Academy of Sciences, organized in 1817, is the fourth oldest scientific society in the United States and its present membership is located in all 48 states, the District of Columbia, and in many foreign countries.

Lecture Platform

A GROUP of distinguished scholars from foreign nations will deliver a series of lectures at M.I.T. this spring while guests of, or visitors to, the Institute. Among the scholars who have already been in residence at the Institute – and whose lectures form a part of the spring program – are the Honourable Arthur Tyndall, '24, of New Zealand, Max Stoll of Geneva, and Andre J. Guinier of Paris who will deliver the Robert S. Williams Lectures.

The Honourable Arthur Tyndall, Judge of the Court of Arbitration of New Zealand, has been appointed visiting lecturer in the Department of Economics and Social Science at M.I.T., it was announced by John E. Burchard, '23, Dean of the School of Humanities and Social Studies.

Mr. Justice Tyndall arrived in the United States on February 27 for a six weeks' visit under the sponsorship of M.I.T. While at the Institute he will give a series of lectures based on his distinguished background of experiences as Senior Justice of the Court of Arbitration of New Zealand, a post which he has held since 1940. Early in his career he won the Bayliss Prize of the Institution of Civil Engineers, London, in the examination for associate membership.

Max Stoll, Director of the Research Department at Firmenich and Company of Geneva, Switzerland, delivered two lectures at the Institute late in February. Dr. Stoll, who is widely recognized for research in the field of aromatic chemistry, will receive the 1953 Fritzsche Award of the American Chemical Society while in the United States.

On February 24, under the auspices of the Department of Food Technology, Dr. Stoll spoke on "New Analyses and Organic Syntheses of Flavor and Odor Components" in Huntington Hall. The following day, under the auspices of the Department of Chemistry, Dr. Stoll spoke on a "General Survey of the Preparation of Megacyclic Musks."

Andre J. Guinier of the National Conservatory of Paris delivered the 1953 Robert S. Williams Lectures in the Department of Metallurgy at M.I.T. on March 10, 11, and 12. Dr. Guinier, who is Visiting Lecturer in Applied Science at Harvard University this spring, is internationally known for his work in the field of x-rays and metallurgy. He is professor at the Sorbonne and is codirector of the testing laboratory in the *Conservatoire des Arts et Metiers.*

In his lectures at M.I.T. on March 10 and 11, Dr. Guinier spoke on "Precipitation Phenomena in Supersaturated Alloys"; his lecture on March 12, sponsored jointly with the Department of Physics, dealt with "Recent Progress in X-ray Crystallography."

These Robert S. Williams Lectures continue the annual series of the Department of Metallurgy, in honor of the first head of the Department.

Industrial History

EXPLORATIONS in industrial history, designed to reveal the significant sweep of technological change, will soon be undertaken at the M.I.T. School of Industrial Management, according to E. P. Brooks, '17, Dean of the School. This field of study will be under the direction of Elting E. Morison, now Associate Professor of English in the School of Humanities and Social Studies, who will join the faculty of the School of Industrial Management next July as associate professor of industrial history. Professor Morison is widely known as the editor of *The Letters of Theodore Roosevelt.* In making this announcement Dean Brooks said:

The new history study will take into consideration the past of this country and, within these national limits, concentrate on the history of science, technology and industrial development, including the influence of industry upon our political and social organization. The emphasis on American industry is not meant to preclude instruction and research on the experience of other countries in which industry has been a determining influence.

A field of special interest will be the significant sweep of technological change. This is a process, involving as it does the direct and indirect results of industrial development on American life, that should be closely examined.

It is important that we know what are the causes of change, under what conditions change accelerates or slows down, who assists it, who resists it, how "good" changes are selected and "bad" changes rejected, how socially and administratively the necessary accommodations to change are made. If change is found to be the essential fact of our industrial society, we should know more about it and seek ways of preparing men to solve new problems.

In discussing plans for the program, Professor Morison said:

The general intent should be to discover, first, what the thing we call industry is, how it works, what it is like to live in it, what it looks like to those outside of it. And it will be interesting to find out wherever possible how industry has affected the shape, feelings, hopes, fears, and the daily life of the society it has produced.

A native of Milwaukee, Wis., where he was born in 1909, Professor Morison received the degree of bachelor of arts from Harvard University in 1932 and his master's degree in 1937. During World War II he served as a lieutenant commander in the United States Naval Reserve, and was consultant to the Research and Development Board of the Department of Defense from 1946 to 1952. Professor Morison has been a member of the Institute's Faculty since 1946, and has served since 1948 as director of the Theodore Roosevelt Research Project, under which eight volumes of President Roosevelt's letters have been published."

Class Reunions

Not as capricious as spring, when this issue of The Review comes to hand, are the plans which have evolved for class get-togethers and reunions to be held in conjunction with Alumni Day on Monday, June 15, and on other dates. The classes listed will hold reunions at the places indicated:

1893 Tentative plans for a meeting on the M.I.T. Campus early in June. Leonard B. Buchanan, reunion chairman, Stone and Webster, Inc., 49 Federal Street, Boston.

1898 Plans are tentative for 55th reunion. Full information will be in May Review. Lester D. Gardner, reunion chairman, 875 West End Avenue, New York 25, N. Y.

1900 June 16–18. The Pines, Cotuit, Mass. Elbert G. Allen, Secretary, 11 Richfield Road, West Newton, Mass.

1903 June 12–15. June 12, participation in commencement exercises; June 13 and 14, 50th reunion celebration at Coonamessett Ranch Inn, North Falmouth, Mass.; June 15, participation in Alumni Day events. Carlton F. Green, reunion chairman, Stone and Webster, Inc., 49 Federal Street, Boston.

1908 June 12–14. Snow Inn, Harwich Port, Mass. H. Leston Carter, reunion chairman, 14 Roslyn Road, Waban 68, Mass.

1911 June 19–21. Informal get-together at Snow Inn, Harwich Port, Mass.

1913 June 12–14. Oyster Harbors Club, Osterville, Mass. William R. Mattson, reunion chairman, 28 Brookdale Road, Newtonville 60, Mass.

1918 June 12–14. Weekapaug Inn, Weekapaug, R. I. Reunion chairmen: Max Seltzer, 87 Ivy Street, Brookline, Mass.; Saxton W. Fletcher, 880 North Street, White Plains, N. Y.

1921 June 15. Class cocktail party at Hotel Statler, Boston, preceding Alumni Banquet.

1923 June 11–14. Sheldon House, Pine Orchard, Conn. Channing P. Clapp, reunion chairman, 210 Main Street, Matawan, N.J.

1928 June 12–15. 25th reunion at Baker House, M.I.T., Cambridge, June 12–14. Participation in Alumni Day events, June 15. William H. Carlisle, Jr., reunion chairman, Room 5-121, M.I.T., Cambridge.

1933 June 12–14. Wentworth by the Sea, Portsmouth, N.H. Charles C. Bell, Universal Winding Company, Elmwood Avenue, Cranston, R. I.

1938 June 12–14. Curtis Hotel, Lenox, Mass. A. Louis Bruneau, Jr., reunion chairman, 412 Ponfield Place, Ridgewood, N. J.

1943 June 12–14. Mayflower Hotel, Plymouth, Mass. James F. Hoey, Jr., reunion chairman, 1826 Center Street, West Roxbury 32, Mass.

1948 June 13–14. Mayflower Hotel, Plymouth, Mass. Richard H. Harris, reunion chairman, 26 South Street, Grafton, Mass.

For the latest and more detailed information, please consult your Class Notes column, class secretary, or reunion chairman so that you may make satisfactory arrangements for attendance at your class reunion and on Alumni Day, June 15.

Food and Legislation

For the 118 members and guests who attended the 294th meeting of the Alumni Council on March 2, major topics of discussion were the dilemma of world food supplies, and labor legislation of the 83d Congress. In the absence of Edwin D. Ryer, '20, President of the Alumni Association, the meeting at the Faculty Club was called to order by Hugh S. Ferguson, '23, Vice-president.

During the business portion of the meeting, Donald P. Severance, '38, Secretary, announced that Arthur B. Cram, '80, would observe his 100th birthday anniversary on March 13, and that officers of the Administration and the Alumni Association planned to take recognition of this unusual occasion by sending congratulatory messages to be delivered to Mr. Cram by members of the Detroit M.I.T. Association. The Secretary also reported that, between January 27 and February 25, visits had been made to 19 alumni clubs by 19 members of the M.I.T. Administration or members of the Alumni Council. Such visits took members of the Technology family as far afield as Guatemala — where a new club has just been organized — Mexico City, Monterrey, and Montreal.

As Director of the Alumni Fund, Henry B. Kane, '24, reported that, as of March 2, slightly more than 8,000 Alumni had contributed $166,625 to the Alumni Fund for the current year. These figures represent increases of about 30 per cent over last year's figures of comparable data, both as to amount contributed and number of contributors.

Robert L. Johnson, '38, chairman of the Association's Committee on the Boston Luncheon Club, reported that attendance at the monthly meetings had increased from an average of 35, a year ago, to an average of 65 this year. He invited Alumni in Metropolitan Boston to attend meetings at the Union Oyster House at noon on the third Thursday of the month, when members of the M.I.T. staff would speak.

Karl T. Compton, chairman of the M.I.T. Corporation, reported on the successful afternoon and evening meeting of the M.I.T. Club of New York held on February 25. About 400 persons attended this meeting at the American Museum of Natural History, and heard Faculty members discuss different phases of "A Day in the Future." Dr. Compton also made brief mention of the current activity at the Institute where a number of meetings were being held by Visiting Committees, and the Institute's budget for the coming year was in preparation.

In speaking on the "The Dilemma of World Food Supplies," Robert S. Harris, '28, Professor of Biochemistry of Nutrition, placed a Twentieth Century point of view on the Malthusian theory. Studies in the nutritional quality of diets have taken Dr. Harris to Honduras, Ecuador, and Mexico, as well as to various parts of the United States. With the world's population tending to increase geometrically, Professor Harris believes that greater attention should be directed to increasing the nutritive qualities of diets normally found in various portions of the world. Good nutrition depends more on having the proper chemical constituents in food consumed, rather than upon adopting a specific dietary; thus adequate nutrition can be supplied by a wide variety of diets. This point of view assumes considerable practical importance when it becomes necessary, as it has in the past, for nations in one part of the world to assume responsibility for feeding persons in other regions. It was Professor Harris' plea that greater attention be given in the future, than has been extended in the past, to the strong personal preferences for locally produced foods, and the natural reluctance to eat unfamiliar foodstuffs. Finally, since arable land does not come under cultivation as rapidly as population expands, Dr. Harris pointed out that dietaries consisting largely of grain and other plants (such as those of the Asiatics) require less land to produce the same caloric requirements as do meat dietaries, and hence are more efficient, or at least more economical of land.

Douglass V. Brown, Alfred P. Sloan Professor of Industrial Management, concluded the meeting with a talk on labor legislation and the 83d Congress. Dr. Brown reviewed the basic features of a number of labor bills before Congress. He indicated his belief that in enacting any new legislation at this session, Congress would pursue a "middle of the road" policy rather than adopting either extreme; that no major changes in labor legislation are to be looked for in spite of the change in administration; and that the effect of any legislation which is enacted would probably depend not so much upon the actual provisions of any act as upon the general atmosphere of good will or vindictiveness which exists when the legislation is enacted.

Commencement Speaker

Lewis W. Douglas, '17, former U. S. Ambassador to Great Britain, will deliver the principal commencement address at the Institute this June. Mr. Douglas, a graduate of Amherst and a member of the Class of 1917 at M.I.T., has had a rich and varied career as legislator, public administrator, ambassador, and business executive.

He has been a member of the Arizona House of Representatives and the U. S. Congress. A former Director of the Budget, he served during World War II as war shipping administrator. During World War I, he received a citation from General John J. Pershing, and was decorated with Belgium's *Croix de Guerre* for service in the Argonne and Flanders. Mr. Douglas is a former vice-president and member of the Board of the American Cyanamid Company, and past president of the Mutual Life Insurance Company of New York where he has been chairman of the Board since 1947.

George B. Haven: 1871-1953

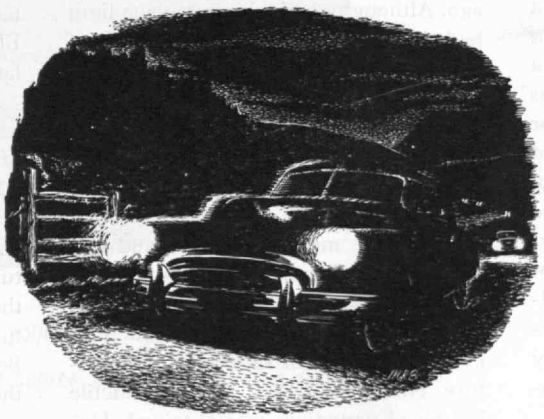
With regret The Review records the death, on March 6, of George B. Haven, '94, Professor of Advanced Machine Design, Emeritus, in the Department of Mechanical Engineering at M.I.T. Widely known as a leader in the design of textile machinery, Professor Haven was the author of numerous articles and books on textile research, and had served as consultant to several textile machinery firms.

(*Concluded on page 328*)

BUSINESS IN MOTION

To our Colleagues in American Business . . .

Those of us who can remember the automobiles and trucks of twenty or thirty years ago find ourselves amazed as we drive down the road, or walk along the street. Today's cars are so immeasurably superior to those we saw, and some of which we owned, years ago. For a long time the automobile industry has been notable for a number of vital contributions. It has put our whole nation on wheels, and has created a modern means of transportation that is so essential that the term "pleasure car" vanished long ago. It has provided employment for millions of us, not only directly in automobile factories, but directly and indirectly in the plants of suppliers of materials and parts, in garages, filling stations, road building, and so on.



Style changes often tend to obscure these economic aspects of the industry, and also to conceal the very real and sometimes amazing mechanical improvements that have been made. Once upon a time the automobile was a noisy, odorous, dirty and difficult contraption, whose owner had to go through a ritual of hand-starting, and be expert in emergency repairs. Women did not dare tackle it. Today it is quiet, clean, reliable, supremely easy to handle since many functions are performed automatically, so reliable that trouble raises eyebrows, and as comfortable as the living room sofa. You might call it a home on wheels. Women drive it as well as men, and neither needs to know what goes on in the chassis.

Years ago a tire manufacturer astounded the country by a guarantee of 5,000 miles; today it is common for a set of tires to go 25,000 miles and more. Carbureters, ignition, combustion chambers and compression have been greatly improved for gas economy and smooth running. The electrical system is a public utility in miniature. Engine cooling is automatic and so is interior heating. Power steering, power brakes and automatic transmissions greatly reduce the effort of driving. You could expand this list many times just by studying the new cars in the light of the old.

What brought all this about? You might say, and properly, that it was made possible by the genius of designers, engineers and production men. But there are other factors. One is the eagerness of the American people to own good cars; to many the automobile is essential, and as a nation we always want the best. Another element has been competition, the American way of business life. More automobile companies have failed than have succeeded; those who survived did so by offering more for the money. After all, in the long run sales are the public response to value.

To us at Revere the automobile industry is a source of great satisfaction, because our sales to it run at a high level. The modern car contains copper and copper alloys in vital parts, the largest single item being the radiator. Our aluminum alloys are also growing in importance in the automotive field. Thus when we buy and drive the 1953 models we have a double feeling of gratitude, first for the really magnificent things they are. And, second for the fact that in all probability they contain pounds and pounds of Revere Metals which through their unique characteristics contribute to the reliable performance we have come to take as a matter of course in our cars.

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What General Electric people are saying . . .

I. F. KINNARD

Mr. Kinnard, with GE since 1922, is manager of the Engineering, Meter, and Instrument Department.

". . . The importance of development engineering to business and industry in general can hardly be overestimated. Successful development engineers are constantly bringing along new products for a new age.

Sometimes developments occur in time-tested and proved products, where they are least expected. Over the past half century G.E. has produced many millions of watthour meters. They have undergone a gradual evolution and refinement so that many considered this a barren field indeed for the development engineer. Yet, as recently as 1948, a completely new watthour meter was developed. It successfully employed for the first time in the engineering world the principle of magnetic suspension of a rotating part. The maintenance-free life of the meter was increased manyfold by this development—a development that was the product of close collaboration of development engineers and materials specialists, particularly metallurgists working on new permanent magnet alloys.

An important part of the development engineer's job is to take that believed to be possible and prove it practical. And in doing this job, he contributes significantly to the evolution of new and better products for a constantly rising standard of living. And whether he realizes it or not, he is one of the vital links in our American economy. His developments are helping to win acceptance throughout the world for the kind of system that brings them forth.

General Electric Review

J. E. BURKE

Dr. Burke is manager of the Metallurgy Section of the Knolls Atomic Power Laboratory

". . . Nuclear reactors are new, but many of the design problems facing the metallurgist are strictly old-fashioned. Such properties as strength, formability, thermal conductivity, resistance to corrosion at high temperatures, and of course, cost and availability, are as important in controlling the selection of materials for nuclear reactors as they are in controlling the selection of materials for other applications.

In addition to these properties, however, it is necessary to consider the interaction of the materials with neutrons. Everything enclosed in the heart of the reactor interacts to some extent with the neutrons, and a very careful control of materials that are included in the reactor is thus necessary.

Since vanadium appeared to be a possible material for use in nuclear reactors, a program to investigate its properties was undertaken several years ago. Although nominally pure vanadium had been available for a number of years, it was brittle and could not be fabricated. Some ductile vanadium had been prepared by calcium reduction of the oxide, but only beads and small pellets were produced. In improving this product, additions of iodine were made to the mixture of V_2O_5 and calcium. Upon heating this charge in a closed pressure vessel, the additional heat provided by the combination of iodine and calcium raised the temperature enough so that a large ductile button of vanadium was obtained. Unfortunately, subsequent runs yielded buttons that were brittle. After extensive investigation it was finally found that the brittleness was due to nitride in the oxide, and the final procedure used involved a careful denitriding of the vanadium oxide by heating in moist oxygen for several hours. The product as now produced can be rolled into thin foil, drawn to wire, or given any of the standard metallurgical treatments except hot working. Because it avidly absorbs oxygen to become brittle, it cannot be heated in air.

There are, of course, a vast number of other metallurgical problems encountered. As in other fields, improvements in materials are imperative if important advances in reactors are to be made. These require continuing work not only directly in the development of better materials but also on the fundamental studies that pave the way for the applied developments.

General Electric Review

C. W. LaPIERRE

Mr. LaPierre is a Company vice president and is general manager of the Aircraft Gas Turbine Division

". . . In 1952 the Aircraft Gas Turbine Division produced over 90% more engines than it did in 1951. And with this increase in production, the General Electric Company became the world's largest known producer of jet engines.

This all-time production high came as a climax to the Company's observance of the "Fastest Ten Years in History" which saluted the decade of aviation progress from 1942 to the end of 1952 . . . from the running of America's first turbojet, the General Electric I-A, to the development of today's advanced turbojets . . . from the flight of the first Bell P-59 to the tremendous speeds of the latest military aircraft.

As the first American designer and manufacturer of jet engines, we at G.E. feel that the expanded need for jet aircraft has justified our pioneering in the field of jet power plants.

In the commercial jet field, G.E. has two engines certified for commercial transports at the present time, the first certification being obtained in 1949. With this background, and the flight experience of thousands of jet engines now flying over Korea and elsewhere, there is no doubt in my mind but that an excellent, economical, American jet engine will be ready for commercial transports by the time the transports are ready to receive them.

Cincinnati, Ohio

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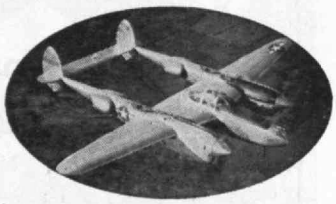
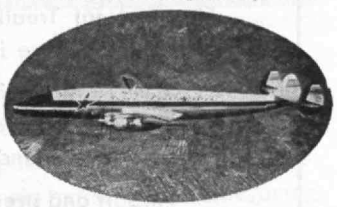


The P-38 Lightning – first 400 mile per hour fighter-interceptor, the "fork-tailed Devil" that helped win World War II.

This Plane is making History



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This plane – which exists only in the brain of an engineer like yourself – is one reason there's a better future for you at Lockheed. For Lockheed will always need engineers with ideas, engineers with imagination, engineers who build the planes that make history.

THE INSTITUTE GAZETTE

(*Concluded from page 324*)

Professor Haven was born on April 28, 1871, in Sangerfield, N. Y., and in 1894 received the degree of bachelor of science from M.I.T. He then joined the Institute staff as an assistant in mechanical engineering. Two years later Professor Haven was promoted to instructor; in 1905, assistant professor; in 1910, associate professor; and in 1914, professor of machine design. He was named professor of advanced machine design and head of textile research in 1929, and seven years later retired to become emeritus professor of advanced machine design. In 1932, Professor Haven was awarded the silver medal of the National Association of Cotton Manufacturers.

AN M.I.T. ENTERPRISE IN OCCUPATIONAL HEALTH

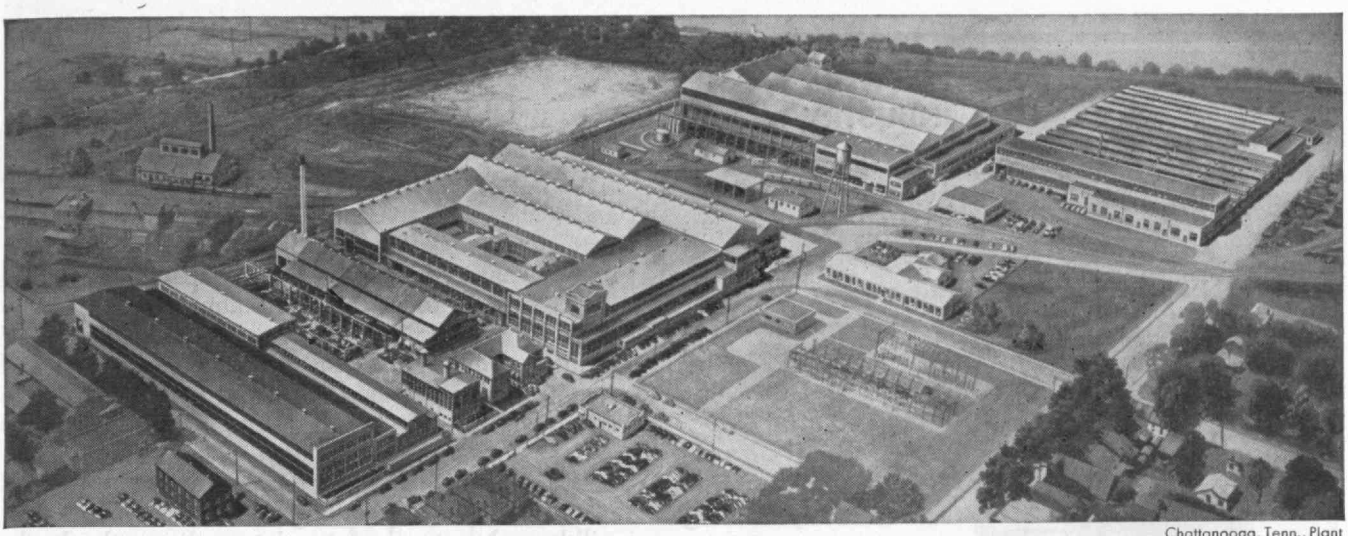
(*Continued from page 318*)

It might appear that the work of the group on radiological safety is entirely separate from that of the engineer and the chemist, but this has not proved to be the case. All three techniques are needed in the persistently difficult problem of safe disposal of toxic and explosive chemicals and dusts and radioactive materials.

One may wonder what the physicians can contribute to the Occupational Medical Service, for the preventive aspects of occupational health have been given first position and stressed in this discussion. In large measure the physicians of the Occupational Medical Service are preventive medical officers in a praiseworthy and fairly modern phase of medicine. By medical examinations at the time of placement, the physicians try to be certain that no staff member or worker approaching a potentially harmful exposure will find a current medical problem aggravated by his work or be harmed by ignorance of what his work entails. Chest x-rays, base-line repeated blood counts and, complete medical histories are examined. It should be emphasized that no one is kept from a job because of medical findings, with the exception of active carriers of contagious diseases. All medical findings are confidential between the physician and the individual who is told what is found and given relevant corrective suggestions.

The physicians are informed on the special effects of excess exposures to toxic chemicals, harmful dusts, and excessive radiation, and they work with the other Medical Department physicians as individual cases arise. Interpretation of chest x-rays and blood counts, in special groups of workers, and correlation of these data with measurement of air-toxicity radiation are further examples of the interdependence of the members of the Occupational Medical Service and the close relationship of this group as a whole to the Medical Department. Actual experience has brought us mercury effect, pulmonary edema from an irritant gas, x-ray burn of the hand, beryllium intoxication,

(*Continued on page 330*)



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Today, with the company's backlog of orders at an all-time high, an accelerated program of expansion is well under way at the company's two largest plants—Chattanooga and East Chicago. This multi-million dollar program, begun early in 1952 and scheduled for completion by mid-1953, will effect a 50 per cent increase in the production capacity of these two plants. This increase will add nearly six acres of manufacturing area fully equipped with the most modern machine tools and special fabricating facilities.

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AN M.I.T. ENTERPRISE IN OCCUPATIONAL HEALTH

(*Continued from page 328*)

and toluene-induced narcosis as problems calling for special handling. The total quantity of work of purely service character done by the Occupational Medical Service totals about 900 visits annually in the two years for which figures are available. Roughly, half of these visits are made for medical consultations and examinations of various kinds, and the other half are field visits of the technical staff to laboratories where toxic materials are in use.

If industry understands the dangers to health and safety involved in handling this or that material, it will know how to prevent such tragedies as the deaths of young women engaged in using red phosphorus in making matches. Thus, in many ways, the teaching of Institute students, who in the future will have important industrial posts, is the most exciting function of the Occupational Medical Service. For the most part this teaching is informal to individuals and to single classes on invitation by instructors. Thus far, the Departments of Chemistry, Physics, Metallurgy, Food Technology, Electrical Engineering, and the Sloan School of Industrial Management have asked our co-operation.

In 1952, at the request of Rolf Eliassen, '32, Professor of Sanitary Engineering (and with help from the members of the Department of Industrial Hygiene of the Harvard School of Public Health), the Occupational Medical Service gave a course in Industrial Hygiene for credit to a class of graduate students. As experience and skill are gained, a remarkable opportunity becomes apparent to awaken M.I.T. students, at graduate and undergraduate levels, to the knowledge available in the field of prevention of occupational illness and accident. As Dr. Alice Hamilton pointed out 20 years ago, if the technical men going into industry know the facts of hazardous exposure much industrial illness can be prevented.

Finally, we believe that a lively department of high professional excellence will wish to carry on some investigation while leading its daily life of service, and will manage to find the time for this. The Occupational Medical Service has many questions it wants to study. As opportunities arise, the staff will address itself to questions such as the following, some of which are already being studied now: the factors involved in the vaporization of mercury; absorption factors involved in evaluating radioactive aerosols collected by filter-paper techniques; a volatile filter as a collection for chemical, weight, surface area, and particle-size analysis; determination of uranium in air by various collecting mediums, and comparison between radioactive counting and fluorometric methods of analysis; development of method and study of urinary execution of strontium;[90] study of the incidence of binucleated lymphocytes in the Institute community; further study of the clinical aspects of beryllium effect, and long-term study of changes in the blood elements in workers exposed to low-level

(*Concluded on page 332*)

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RADIO CORPORATION of AMERICA

AN M.I.T. ENTERPRISE IN OCCUPATIONAL HEALTH

(Concluded from page 330)

radiation. There probably is not enough time or money in a lifetime for achieving all this.

In conclusion, a word or two may be in order regarding the staff, whose responsibilities have been outlined above.

Dr. Harriet L. Hardy, Assistant Medical Director in charge of the Occupational Medical Service, joined the Medical Department in the spring of 1949 to develop the preventive aspects of occupational medicine as needed by the Institute. After 10 years of medical practice, Dr. Hardy received three years' practical training in occupational disease with the Division of Occupational Hygiene of the Massachusetts Department of Labor and Industries during 1945-1948. During 1948, prior to coming to M.I.T., Dr. Hardy studied medical problems associated with radiation exposure as a staff member of the health division of the Los Alamos Scientific Laboratory.

Dr. Ivan D. Frantz, Jr., of the Huntington Memorial Group at the Massachusetts General Hospital, gives skillful service in the problems of the biological effects of radiation.

Dr. Albert O. Seeler, of the Atomic Energy Commission, formerly assistant professor of Industrial Medicine at Harvard, serves one day a week, providing medical supervision for workers exposed to unusual toxic hazards.

Samuel Levin, an Institute graduate of the Class of 1948, is the full-time physicist holding the position of Institute Radiological Safety Officer.

Frederick J. Viles, Jr., also an Institute alumnus (Class of 1938), with graduate training in the Department of Industrial Hygiene of the Harvard School of Public Health, and experience in industrial hygiene with the U. S. Navy, and the Liberty Mutual Insurance Company, was at first part-time and, since 1950, is full-time industrial hygiene engineer.

Miss Janet E. Walkley, trained as an industrial hygiene chemist, joined the Occupational Medical Service in 1950, after six years with the Employers Group.

From this discussion of the work being done, the reader will surely sense the great potential for preventative medical service and teaching of this happy enterprise placed, as it is, in the vigorous life of the Institute's Medical Department.

SCIENCE AND RELIGION

(Continued from page 314)

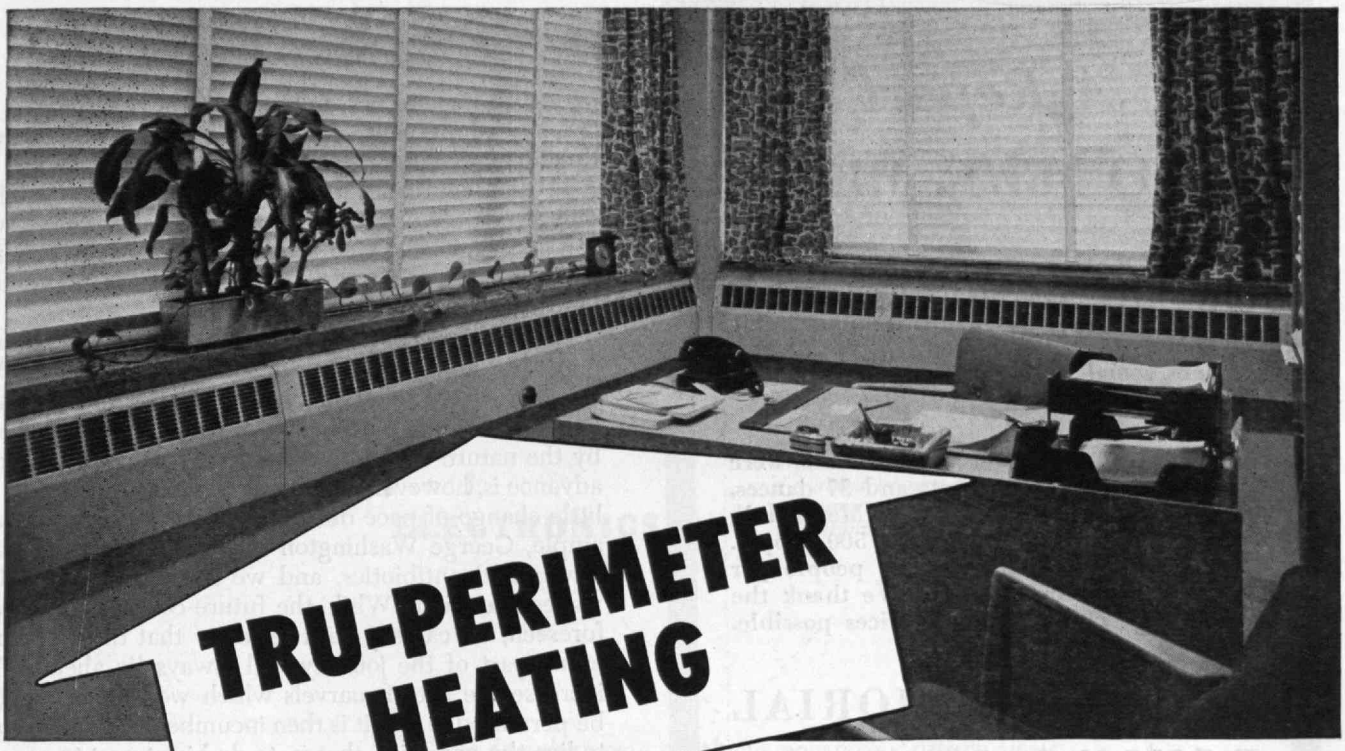
character experience only misery all their lives, while others who never do a worthy act are uniformly prosperous. This is the effect of chance. What can be said with certainty is that, if millions of individuals are considered, it will be found that in almost all cases those of better character are healthier, happier, and more prosperous. But since this is only a probability there are always some who follow the wrong course because they overestimate the chance of winning by wrong methods. These people are often not evil but, as Socrates so strongly emphasized, only ignorant. They are merely poor mathematicians.

Since right makes might, it is the object of politics, as well as of religion, to determine what is right. In some cases, for example homicide, the decision is simple. In others, the conclusion may be much less obvious. The difficulty is that right is often a complex of many factors. To determine the relative merits of two procedures it is necessary to assign weights to these factors, and any assignment of weights is arbitrary. A logical conclusion may therefore not be possible.

For example, Tacitus, the Roman historian, was much impressed with the rugged individualism of the Germans. Each citizen insisted on having a little piece of ground about his house, and was willing to support his leaders in war only when convinced in popular assembly. Tacitus hardly realized that these simple qualities made the German system better, and therefore ultimately stronger, than the collectivism of Rome.

At present the world is largely ruled by two ideologies. In half the world it is believed that a small group of men can plan the daily lives of all the others. History, as well as reason, shows that this is not possible, even if the leaders are of the highest character and have the greatest ability. In the other half of the world, it is believed that the majority can plan for all the people. History and reason again indicate that this is impossible. In reality, neither of these methods of rule has ever been tested in practice. In autocracies, as well as in democracies, the government concerns itself only with a limited number of things. If two lists were made – one including the acts in which the government takes part, the other containing the acts left entirely to the individual – the list of individual acts would probably be longer even under the most autocratic government. The success of a particular state

(Concluded on page 336)



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SCIENCE AND RELIGION

(*Concluded from page 334*)

may then depend not on which of these ideologies it actually adopts, but on how much it neglects to put that ideology into practice.

In such confusion the only certainty is that right will ultimately prevail. Like the ancient Hebrew, we can only hope that God is on our side, or as Abraham Lincoln better phrased it, that we are on God's side, that is, that we are right.

Life may be considered a journey whose beginning was nothing, whose destination is infinity. On this journey we are not only passengers but also members of the crew. The course of life is probably fixed by the nature of the physical universe. The speed of advance is, however, influenced by our efforts. With a little change of pace during the Middle Ages, for example, George Washington might have had electric power and antibiotics, and we might have already visited the moon. While the future course cannot be foreseen, we can say with certainty that the most exciting part of the journey will always lie ahead. To increase the list of marvels which we ourselves will be permitted to see, it is then incumbent on each of us to live the good life, that is, to do his utmost to speed the journey onward.

PROJECT GLACIER

(*Concluded from page 321*)

3. *Nelson's Encyclopaedia,* 5:439.
4. Matthew 13:5.
5. *One Hundred Years' Progress of the United States,* page 21 (Hartford: L. Stebbins, 1871).
6. *Ibid.,* page 27.
7. Willison, George F., *Saints and Strangers,* pages 161, 162 (New York: Reynal and Hitchcock, 1945).
8. Willison, *op. cit.,* pages 192, 231, 232, 262.
9. Deeds in Pilgrim Hall, page 12 (1673), page 14 (1661, 1684), page 19 (1655), page 20 (1644, 1692). *Historical Collection and Pictures, Pilgrim Hall* (1930).
10. *Reference Guide to Salem,* 1630 (Pioneer Village).
11. Scott, William B., *Introduction to Geology,* 2d Ed., (New York: The Macmillan Company, 1908).
12. An old New Hampshire man vouches for the tax abatement. Research by several law libraries, however, fails to verify this statement.

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Assurance is required that relocation of the applicant will not cause disruption of an urgent military project.

SOCIAL ASPECTS OF AERONAUTICS

(Continued from page 313)

and exclusive sovereignty over the airspace above its territory."

The exercise of sovereignty supposes some practical action for control and enforcement. It is not a purely academic question. It has long been held that the territory of a State is limited by the ability of that State to make its law effective. In the Seventeenth Century, a Dutch jurist (Bynkershoek) evolved from established practice the now generally accepted principle that "dominion seaward is limited to the extent to which it is possible to enforce it," a principle which created the concept of territorial waters and the three-mile limit (cannon-shot range).

This would be a harsh rule to apply to the airspace. Only a few great States have power to control the airspace above their surface territory. Weak States have no such power. But the possession of power does not determine international right. The ancient principle of unlimited sovereignty is becoming eroded in these times of interdependence, in favor of international agreements and the delegation to a United Nations Organization of powers once reserved to individual States.

Air Power

We seek security in our ability to control the airspace above us and to defend ourselves against an aggressor by early interception of his aircraft. The complex of resources needed to give a nation control of the airspace against a challenge is commonly called "air power." The term need not be defined in detail, but it includes as its foundation scientific and industrial resources adequate to create superior airplanes and weapons, as well as the Air Forces to use them. Air Forces are presently organized by function in accordance with the current ideas of military planners. These ideas change with technical progress, and the international climate.

The great nations are experiencing a period of extreme pressures on their economies and ways of life. At the same time, control of a new power to destroy one another has been given them. Aeronautics, the new tool of global transportation, offers new means to make war at a distance. By this very threat, it stimulates efforts to seek voluntary adjustments between nations to resolve their fears of one another.

(Continued on page 340)

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†Du Pont's polyester fiber

SOCIAL ASPECTS OF AERONAUTICS

(Continued from page 338)

International Society

Aeronautics can be a tool for the implementation of a world-wide regime of law and order. It facilitates the meetings of statesmen, the conduct of inspections and police action, and in general can serve for both surveillance and enforcement.

Professor William F. Ogburn has said that historians are reluctant to give credit to technology rather than to great men as a social force, while philosophers of history give all credit to ideas. Neither party can be entirely right.

Columbus discovered America and set in train a vast succession of social changes, but back of Columbus lay the technology of the ocean-going ship. Without Columbus some other European would have discovered the New World. The existence of the ship guaranteed it.

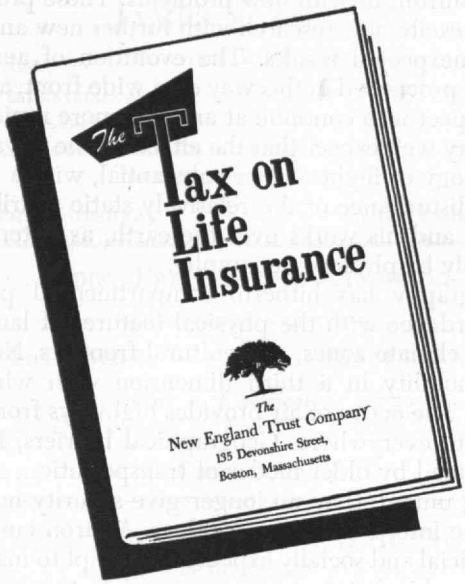
There is a propelling force in technology which drives great men and also constitutes the propelling force of ideas. For example, the idea of nationalism is powerful today. The territorial base for the modern State was laid by transportation inventions and consolidated by communications. Without them nationalism would be restricted to a very small area. Finally, the present international struggle, which is only accentuated nationalism, is based on the inventions of warfare, principally air power. Technology prepares the way for statesmen or for conquerors.

There is now a huge disproportion between human wisdom and human power. Perhaps the best fruits of the tree of knowledge are tools. The airplane of the Wright brothers has become the vehicle for a world-wide system of air transportation and, at the same time, it has been the means for the annihilation of cities.

There have been sermons on the good and the evil of new knowledge, and the dedicated research man is not unaware of the perils of his success. The airplane is just another tool to serve the purposes of mankind; whether for good or evil is determined by the user. The individual with an airplane is not a serious menace as he is controlled by the police power of the State. So is the individual with a torch or a motor car. The

(Concluded on page 342)

Some Things YOU Should Know About The Tax on Your Life Insurance



Your life insurance is subject to the Federal estate tax just as are your securities, your real estate and your business interests.

The way you arrange your life insurance may increase or decrease the tax on your whole estate. This is particularly true since 1948 when the tax law first allowed a "marital deduction".

To minimize taxes, and to provide a better financial future for your family, it is essential that you integrate your life insurance into the plans you have made for distributing all your other assets—whether or not the other assets are jointly or individually owned.

We shall be glad to work with your lawyer and life underwriter in helping you work out such an overall estate plan.

We invite you to visit or write our Trust Department for a copy of our booklet, "The Tax on Life Insurance". It may help you conserve more of your life insurance for your beneficiaries.

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SOCIAL ASPECTS OF AERONAUTICS

(Concluded from page 340)

complex apparatus of air power, however, is a tool of the State, to be used as its leaders may desire. In them we hope for wisdom. Complex societies are expected to produce social patterns capable of absorbing innovations. Our present international society is in the process of adjusting itself to the innovation of flight. The adjustment is painful, and the final pattern has not yet evolved.

In scientific research we have a kind of chain reaction. Research emits new knowledge whose applications confront us with new problems. These problems in turn excite new research with further new and perhaps unexpected results. The evolution of aeronautics has proceeded in this way on a wide front, and we may expect it to continue at an even more rapid rate. One may well expect that the effects of the advancing technology of flight will be substantial, with a consequent disturbance of the relatively static distribution of man and his works over the earth, as determined primarily by physical geography.

Geography has hitherto compartmented peoples in accordance with the physical features of land and sea, by climate zones, and cultural frontiers. Now we have mobility in a third dimension with which to reckon. The ocean of air provides highways from anywhere to everywhere. Geographical barriers, largely determined by older modes of transportation, are becoming unreal; they no longer give security nor prevent the interpenetration of ideas. An iron curtain is an artificial and socially expensive attempt to maintain a geographical status more appropriate to a previous century.

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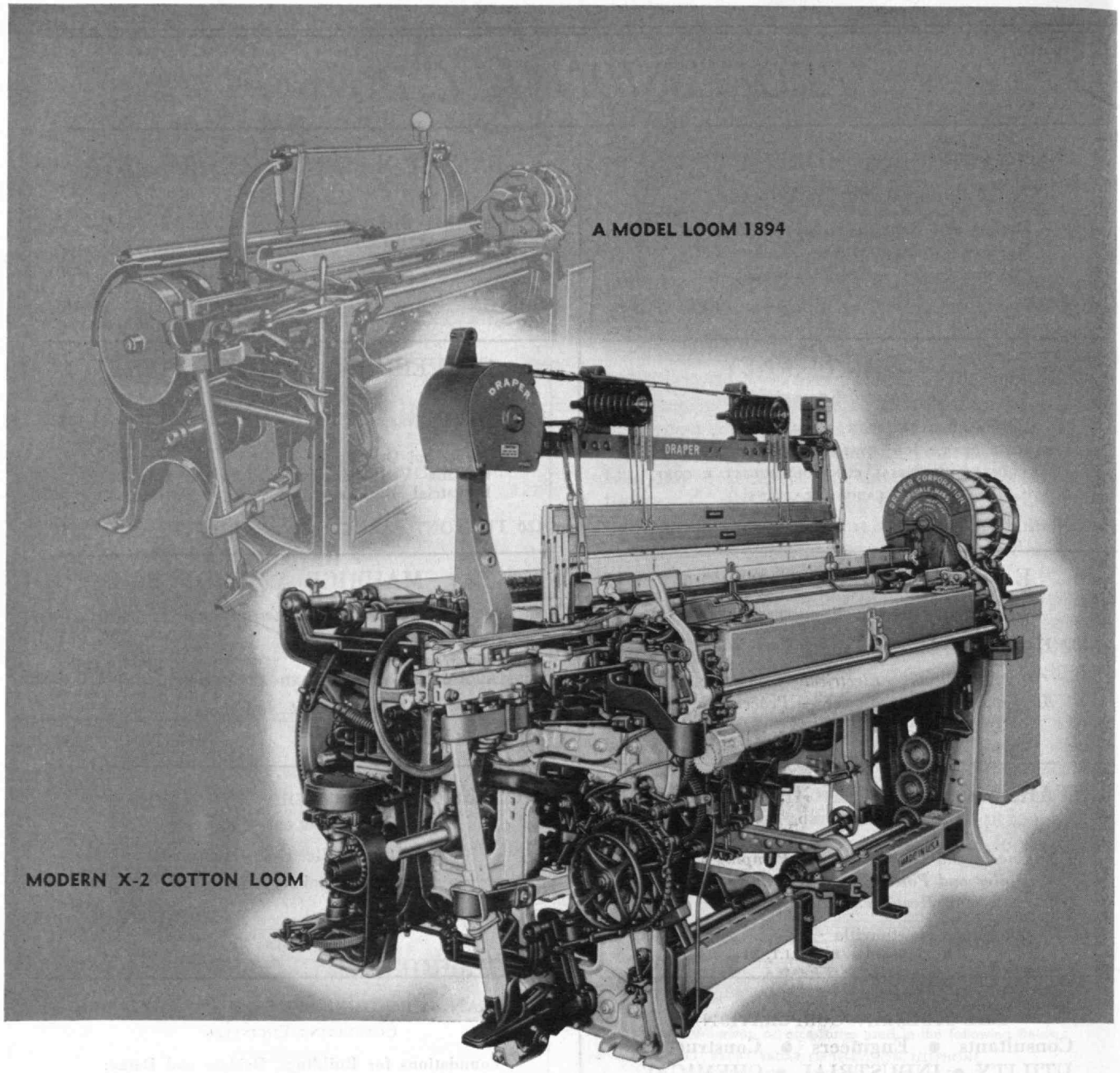

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Alumni AND Officers IN THE News

Alumni Laurels

HOWARD W. GREEN'16 was named a fellow of the American Statistical Association at the Association's convention on December 28. Mr. Green was chosen on the basis of his pioneer work in the study of population movements.

WESLEY C. L. HEMEON'26 was named Man-of-the-Year in the field of science for 1952 in Pittsburgh by the Junior Chamber of Commerce on January 23. Mr. Hemeon was selected for the award in science as a result of his outstandingly important work in air pollution abatement, industrial dust control and ventilation.

JAMES R. KILLIAN, JR.,'26 and ROBERT S. HARRIS'28 have been named to receive honorary degrees from the medical school faculty of the University of Havana.

WILLIAM SHOCKLEY'36 received the first annual Oliver E. Buckley Solid State Physics Prize of the American Physical Society at a banquet at Harvard University during the January 22-24 meeting of the Society. The award was made for Dr. Shockley's contributions to the physics of semi-conductors.

SAMUEL A. GOLDBLITH'40, Assistant Professor of Food Technology, and Paul V. Cusick, Assistant Director and Fiscal Officer of the Division of Industrial Cooperation, were among 10 outstanding young men cited for making "great contributions to their communities and their chosen field of endeavor through their loyal, faithful, and unselfish efforts" by the Boston Junior Chamber of Commerce on February 19.

WALTER J. FREEMAN'49 has been awarded the Perkins Scholarship Prize of the Yale University School of Medicine. Mr. Freeman, a third-year medical student at Yale, was given the award for achieving the best scholastic record in the basic subjects of the medical and biological sciences. The Perkins Scholarship Prize was established in 1914 by the gift of the widow of George C. Perkins.

Technically Speaking . . .

DAVID E. PIERCE'17 discussed "How to Control Costs by Kilowatts" before a meeting of the American Institute of Chemical Engineers. Mr. Pierce's talk was published in the January, 1953, issue of *Chemical Engineering*.

CLARENCE J. LEBEL'26, HERMON H. SCOTT'30, and JERRY B. MINTER, 2d,'34, were among the speakers at a symposium on Amplifiers, presented by the Audio Engineering Society in New York City on February 17.

JAMES B. RESWICK'43, Assistant Professor of Mechanical Engineering, spoke before a meeting of the American Society of Mechanical Engineers, Boston Section, on February 26. Mr. Reswick chose for his subject: "The Electronic Analog—A Tool of Applied Mechanics."

On March 10, ALFRED K. SUSSKIND'50, Research Engineer of the Servomechanisms Laboratory at M.I.T., was a speaker at a meeting of the American Institute of Electrical Engineers, Boston Section. Mr. Susskind discussed "A Numerically Controlled Milling Machine."

Major League

WILLARD F. ROCKWELL'08, Chairman of the Board of the Rockwell Manufacturing Company, has been appointed to the Mutual Security Administration. Mr. Rockwell will serve in the Mutual Security Administration's productivity section.

JOSEPH W. BARKER'16, President of the Research Corporation, has been elected chairman of the Scientific Research Society of America, New Haven, to succeed Karl T. Compton, whose second term ends in June, 1953.

On February 4, BRIAN O'BRIEN'19 was appointed vice-president in charge of research of American Optical Company. Dr. O'Brien has taken a leave of absence as director of the Institute of Optics and as research professor of physics and optics at the University of Rochester, with which he has been affiliated continuously since 1930.

HARVEY WILLIAMS'22 was appointed to the Executive Committee of the Board of Directors of H. J. Heinz Company, Pittsburgh. He is vice-president in charge of Overseas Operations, responsible for the Heinz subsidiary companies operating outside of North America.

BERTRAM E. WARREN'23 and MACLYN MCKEEHAN '52 are coauthors of an article entitled "X-Ray Study of Cold Work in Thoriated Tungsten," which appeared in the January, 1953, issue of the *Journal of Applied Physics*.

WILLIAM A. FORRESTER, JR.,'26 was elected vice-president of the Hartford Fire, and Hartford Accident and Indemnity Company on December 31.

GUSTAVO LOBO, JR.,'27 has been named vice-president of the New York Coffee and Sugar Exchange.

THOMAS W. REGAN'32, Vice-president of the General Box Company, has been elected to a three-year term as director of the New England Lumberman's Association.

JOHN R. BROWN, JR.,'39, Director of Research for the Lambert Pharmacal Company Division of the Lambert Company, was appointed vice-president of the Division on February 5.

KENNETH R. FOX'40 has been named vice-president and member of the board of directors of the Fabric Research Laboratories.

EDWARD A. BEAUPRE'41 has been appointed chairman of the panel on procurement of the armed forces regional council of New England.

Obituary

EDGAR L. HAMILTON'91, May 4, 1950.*
CHARLES A. MEADE'94, January 14.*
LESLIE R. MOORE'94, January 11.*
WILLIAM REED-HILL'94, 1947.*
JULIA GIBBS ADDISON'96, June 4.
G. FRANKLIN ATKINS'99, January 24.
JOHN R. ANDERSON, JR.,'01, December 22.
HARVEY M. HICKOK'03, July 7.
SAMUEL T. WORCESTER'04, date unknown.
WILLIAM F. BECKER'05, May 30, 1949.*
JAMES M. DE MALLIE'05, December 4.*
JOHN C. EADIE'05, date unknown.*
ALBERT C. GILBERT'05, February 12.*
HENRY A. WENTWORTH'05, date unknown.*
FRANK K. BELCHER'08, March 28, 1952.*
G. TEMPLE BRIDGMAN'08, November 25.*
ALLSTON DANA'08, May 12.*
LEON D. HOWE'08, 1952.*
LYNN ALBERT LOOMIS'08, February 7, 1952.*
HENRY V. MACK'08, October 23.*
MAURICE L. MCCARTHY'08, January 26, 1952.*
WILFRED A. MORRIS'08, August 1.*
RICHARD C. STICKNEY'08, December 15.*
HOWARD TORREY'08, March 5, 1952.*
ROBERT E. DOANE'09, January 21.*
LAURENCE S. WINCHESTER'09, December 15.*
JOSEPH G. BACH'10, November 20, 1949.
GEORGE FOX'10, December 9.*
ARTHUR H. CLARK'13, August.
EDWARD M. TAYLOR'13, 1937.
EARL E. DETRICH'15, December 8.*
HOWARD M. SAWYER'15, January 11.*
LEVI F. SILVERSMITH'15, December 18.*
EDWIN A. EKDAHL'16, January.*
EDWIN D. HALE'16, February 11.*
WILLIAM F. DEAN'17, January 28.*
HENRY L. MILLER'17, December 27.*
GILBERT F. BEERS'19, January 15.*
CHARLES H. HERTY, JR.,'21, January 17.*
JOHN A. HAYES'22, January 22.*
HAROLD A. DAMBLY'23, January 15.*
SCHUYLER HAZARD, JR.,'23, December 29.*
FRANK W. BEMIS, JR.,'25, January 2.*
DANIEL GURNEY'25, February 3.*
KIMIKATA NAGAMINE'25, March 17, 1945.*
ARTHUR T. HEWLETT, 2D,'26, January 24.
NANDLAL M. SHAH'30, December, 1951.
WALTER H. BENKER'33, January 14.*
HARVEY G. SCHWARZ'33, date unknown.*
CARLOS W. BONHAM'43, June 15.

* *Mentioned in class notes.*

News FROM THE Clubs AND Classes

CLUB NOTES

M.I.T. Club of Buenos Aires

On November 15, the Club held its last luncheon meeting of 1952. The luncheon took place at the Navy Club at Tigre, some 20 miles north of Buenos Aires. Most of the members were accompanied by their wives. After a splendid lunch with wines and other "spices," the party fully enjoyed a scenic cruise.

Among those present were: Mr. and Mrs. Flynn'05, Lana-Sarrate'18, Igartua '23, Ottonello'22, Preloran'22, Bertino'23, Marin'38, Aleman'38, Goodbar, 6-45, Krag'44, Briozzo'46 and Vicien, 6-45. — OSCAR L. BRIOZZO'46, *Secretary-Treasurer,* Laprida 526, San Isidro, F.C.N.G. B.M., Buenos Aires, Argentina, South America

M.I.T. Club of Central Massachusetts

Dr. Hudson Hoagland'24, and Dr. Gregory Pincus, co-directors of the Worcester Foundation for Experimental Biology, were the speakers at the winter meeting of the Club which was held on January 19 at the Hotel Sheraton in Worcester. The 23 members and guests who attended heard very informative talks about the Foundation and its accomplishments.

Dr. Hoagland described briefly his association with Dr. Pincus and the work they did together, which led to the establishment of the Foundation several years ago. He told of its growth in a few years from a small group working in a made-over barn to the present organization employing more than 100 persons, many of them highly trained in various fields. The work of the Foundation consists primarily of fundamental research in the fields of biology and bio-chemistry. Dr. Hoagland also told of experiments being conducted concerning the relationship of hormones to such diseases as arthritis, cancer, and mental diseases.

Dr. Pincus spoke about some of the work the Foundation has been doing in the study of heredity. The most interesting experiments he talked about concerned the successful fertilization of ova of animals by chemical means. He felt that use of these methods might eventually revolutionize the livestock and poultry industries. Both speakers answered many questions concerning the Foundation itself and the work being done there and elsewhere in this very fascinating field of study. There was no doubt that those attending found the talks of great interest.

The following Alumni were among those present: C. A. Read'91, H. M. Latham'93, R. F. Zecha'14, S. K. Cooper'17, F. S. Britton'20, E. P. Whitehead'20, M. M. Green'21, Andrew Jensen, Jr.,'21, Mac Levine'25, K. W. Proctor'25, R. N. C. Hessel'27, H. F. Atwood'32, Arthur Lowery'32, F. E. Mader'32, W. F. Baxter'34, R. J. Clarke'35, H. R. Gordon'38, D. M. Whitehead'45, J. E. Haggett'47, and Robert McPherson'50. — DONALD M. WHITEHEAD'45, *Secretary,* 464 Salisbury Street, Worcester 9, Mass. RICHARD H. HARRIS '48, *Assistant Secretary,* 26 South Street, Grafton, Mass.

M.I.T. Club of Cincinnati

The Club held a dinner meeting Thursday, February 5 at the University Club. Mr. Daniel J. Ransohoff, Community Services Director of Family Service of Cincinnati and Hamilton County, gave an illustrated talk on housing conditions in Cincinnati.

Mr. Ransohoff, who is incidentally the son of Nathan Ransohoff'10, gave a very effective talk illustrated by color slides which he made and which show a side of Cincinnati in which we cannot take pride, and for which we have no immediate engineering solution. Twenty-two Alumni and their wives were present and constituted a most attentive audience. — ALEXANDER C. BROWN'25, *Secretary,* Emery Industries, Inc., 4300 Carew Tower, Cincinnati 2, Ohio.

Indiana Association of the M.I.T.

The flu epidemic affected the attendance at our January dinner meeting; however, the 20 faithful souls voted it one of the best meetings in ages. It may be that the attendance was also affected by the advance announcement that there were to be six speakers. In any event, it was Ladies' Night, and the ladies insisted that the speeches were "tops." The meeting was held in the Athenaeum where we had a good German dinner, including sauerbraten und kartoffelpfannkuchen, and it was excellent.

Our Vice-president, Edgar Godley'26, was master of ceremonies and introduced the six speakers, each of whom had been allotted five minutes to discuss a century of progress in his industry — quite an ambitious objective, and most of the speakers discreetly ran overtime. Professor Samuel H. Hopper'33 covered the field of public health and biochemistry; Tom Dorste'47 — architecture; Harold Oshry'35 — foundry techniques; Tom Harvey'28 — metals; Ray Ramsey'17 — electric utilities; and John Babbitt'17, slated to talk on railroads, was unable to be with us.

A newcomer to the Club was Calvin H. Mohr'33, who came all the way from Marshall, Ill. We hope he enjoyed the fellowship enough to decide to join us in future meetings Others in attendance were: Mrs. Godley, Lowell Holmes'23, Dr. and Mrs. Herbert Kent'49, Mrs. Ramsey and guest, Frank Travers'23, our President, Mr. and Mrs. John Welch'13, Mr. and Mrs. Tom Dorste'47, Mr. and Mrs. Spiros Pantazi'47. By the way, the last two couples deserve special mention. Eleanor, Tom, Pat and S. P. were all classmates ('47) at Tech in architecture. Can any club top this?

Our February meeting was "super" as the kids say. It was another Ladies' Night and was held at the Indianapolis Athletic Club through the courtesy of our President, Frank Travers. The 21 in attendance enjoyed a delicious buffet dinner with dancing, after which we adjourned to one of the studios where we saw the new Tech movie *Men of Science.* All were very much impressed with this documentary film which brought home to us the tremendous strides made in recent years in the scientific arts. M.I.T. Alumni can be proud of this picture.

The group that attended this most enjoyable evening comprised Mr. and Mrs. Tom Dorste'47, Mr. and Mrs. Russell Fanning'30, Mr. and Mrs. Edgar Godley'26, Professor and Mrs. Sam Hopper'33, Dr. and Mrs. Herbert Kent'49, Mr. and Mrs. Spiros G. Pantazi'47, Mr. and Mrs. Calvin Mohr'33, Mrs. Tom Harvey, Mr. and Mrs. Jim Sligar'41, Mr. Frank Travers'23, Mr. John Welch'13, Mr. Ray Ramsey'17 and his daughter-in-law, Mrs. James Ramsey. — J. RAYMOND RAMSEY'17, *Secretary-Treasurer,* 511 Spruce Street, Plainfield, Ind.

M.I.T. Club of Northern New Jersey

"Automation" — a new name applied to the automatic processing of information — was featured at the winter meeting attended by 81 members and guests on January 29 at Hotel Suburban, East Orange. The speaker, D. V. Savidge of Remington Rand, Inc., is sales manager for his company in the field of electronic computing machines whose application to new fields of use he is developing.

The speaker, at the start, emphasized that the art of "Automation" has progressed far ahead of the knowledge where these machines can be used and for what they can be used. He pointed out that the milling machine developed at M.I.T., which operates according to directions received as impulses from a tape, is an application that awaits practical use.

Mr. Savidge's talk centered around the "Univac," the Remington Rand equipment which was demonstrated to television audiences on election night. The "Univac's" general principles of operation were described in considerable detail and illustrated by slides by Mr. Savidge. This included a description of the automatic tape on which the data is placed as magnetic dots at the rate of 10,000 to 12,000 characters per second, and the machine is able to sense this information at the same speed. The machine is capable of complex tasks of digesting data, making

computations, handling data, combining results of preliminary computations and combinations. It is a large and costly apparatus, five of which have been installed by the federal government in the Bureau of the Census, Controller's Office, Army Map Service, and Atomic Energy Commission. The machine takes no chances on itself but does all operations twice and compares results one against the other to insure accuracy. The size and cost of equipment has made its operation common practice seven days a week on a 24-hour-day basis. The machine has all mathematical functions. An example of the usefulness of the machine was cited: A certain camshaft design problem was worked out for an aircraft engine manufacturer in 27½ hours against two man-weeks which would have been required manually.

In answer to the inevitable question from the floor as to what happened on election night, Mr. Savidge explained that the "Univac" functioned properly but that the statisticians operating it could not believe the early hour indications of the landslide for Eisenhower, and they attempted to make last-minute corrections by dropping previously determined correction factors. Had they stuck by their original factors, the early trends would have been indicative of the final Eisenhower victory.

Grover C. Paulsen, Jr.,'40, Club President, presided, and, before the subject of the evening, brief reports were made by Joseph Wenick'21 as Treasurer, Jack F. Andrews'33 for publicity, H. D. MacDonald'22 for placement. In the absence of Stuart G. Stearns'39, Program Chairman, Mr. Paulsen announced that Ladies' Night was scheduled tentatively for April 8. The last hour of the meeting was given over to sociability and refreshments. — Russell P. Westerhoff'27, *Secretary*, 823 East 23rd Street, Paterson, N.J. Jack F. Andrews'33, *Assistant Secretary*, 209 Tuttle Parkway, Westfield, N.J.

M.I.T. Club of Rochester

At the December 3 meeting, Richard C. Fowler'37 outlined his progress in applying engineering methods to medical research. Impressed by the great strides that could be made if man's mental prowess could be continued undimmed into the advancing years promised by increased longevity, he turned from electrical engineering to medicine. Graduating from the Medical School of the University of Rochester in 1945, he remained at the school to undertake a research program that has already achieved national acclaim for its discoveries of certain characteristics of multiple sclerosis, the most common and the most damaging of neurological diseases. Dick reviewed for the Club the methods he used in arriving at the conclusion that multiple sclerosis is similar to cyanide poisoning.

On December 30, 46 Alumni shared greetings and stories with six undergraduates at the Club's annual Christmas luncheon. At this meeting, the Club also enjoyed a visit from Avery A. Ashdown '24, Associate Professor of Organic Chemistry. Students Kenneth Hickman'56, Warren Urlamb'54, and Edward Farrow '53 spoke briefly to the group reporting how M.I.T. looks to the classes of 1953 to 1956.

An inspection of the University of Rochester cyclotron highlighted the January 11 meeting. Dinner was followed by a lecture by University of Rochester Physics Professor, Dr. Arthur Roberts, who described the different types of particle accelerators. Later, members drove to the cyclotron where William F. Coombs, Jr., '47, who is in charge of operation and maintenance of the cyclotron, escorted the tour.

The largest attendance of the year heard Joseph Scanlon, Lecturer in the Department of Economics and Social Science at M.I.T., present his plan for the stimulation of industrial productivity. Those attending the February 11 meeting were highly entertained by Mr. Scanlon's numerous anecdotes taken from his experiences in the Pittsburgh steel mills, as a C.I.O. official, and, later, as a labor relations consultant.

The Club's initial progress with an Educational Council, formed to acquaint embryo technical men in secondary schools in the Rochester area with M.I.T. and to give vocational help, has been a source of satisfaction to many of the Club members this year. For 20 years, the M.I.T. Club of Rochester has had a scholarship committee under whose auspices many grants have been made to area students, including disbursements of $400.00 this year. With a nucleus of four honorary secretaries of the scholarship committee (Dwight VandeVate'22, Clarence Wynd'27, Harry Essley, Jr.,'36, and Fred Kolb, Jr.,'38), a group of 20 Alumni have been combined into an effective Educational Council. Each councilor has been assigned to a school where co-ordination with the faculty has been established. An excellent opportunity for participation was afforded some councilors this year when five of the Rochester area high schools conducted "Career Day" programs at which councilors were invited to speak.

With great anticipation, the Club is now looking forward to the March 18 meeting which will feature a reception and address by Dr. Compton. — Frederick J. Kolb, Jr.,'38, *Secretary*, 211 Oakridge Drive, Rochester, N.Y. William N. Hosley'48, *Assistant Secretary*, 234 Croydon Road, Rochester, N.Y.

M.I.T. Club of Schenectady

The Club has held two meetings since our last report. The first was our annual dinner meeting held January 13 at the Mohawk Country Club. We had an excellent speaker in Professor B. A. Thresher '20, Director of Admissions. We would recommend him to other clubs as an interesting speaker. Professor Thresher spoke on the availability of scholarships and loans for students. He also outlined the admission policy, the functions of the Educational Council and methods of using Alumni contacts with prospective students. The publicity techniques of recruiting, such as trips to high schools by faculty members was described briefly. The after-dinner discussion centered about the phenomenal growth of educational requirements in the United States and the shortage of engineers in the modern economy. The movie release by R.K.O., entitled *Men of Science*, was also shown and well received.

On February 10, the monthly luncheon meeting was held at Ferro's Restaurant. Sam Lee, now editor of the G. E. *Monogram*, was the speaker. The topic was "City Planning." Mr. Lee outlined the functions of the City Planning Commission, its duties, responsibilities and authority. As part of his talk, he presented the present plans for zoning of Schenectady and the slum clearance projects. Twenty-six alumni attended the luncheon. — J. E. Acker'38, *Secretary*, 24 Ellen Lane, Scotia 2, N.Y.

M.I.T. Club of Southern California

The Club's annual meeting was attended by 136 members, their wives, and guests at the University Club in Los Angeles on January 27, 1953. Robert C. Seamans, Jr.,'42, Associate Professor of Aeronautical Engineering, explained the intricacies of rocket research and design in a manner which was both informative and entertaining. His description of future means of travel in the upper atmosphere and in space gave us all the feeling that such travel is neither impossible nor too far distant.

John A. Simpson, President of the Harvard Club of Los Angeles, was introduced to the Club and startled the gathering by announcing that our speaker of the evening was a Harvard man. He admitted later in his remarks, however, that Dr. Seamans was a bona fide M.I.T. man, and Dr. Seamans confirmed the statement in his opening remarks.

A short business meeting followed Mr. Simpson's remarks, and Bob Hiller'31 reported the Club was still solvent. Page Golsan'34 presented the slate of new officers who were promptly elected. Bill MacCallum'24 took over the gavel from our retiring President Rockwell Hereford '24, and introduced an R.K.O.-Pathe film entitled *Men of Science*. This picture made M.I.T. the central theme and stressed the value of the Institute in the United States and in the world as a "molder of leaders" and as the center of much basic research. This picture should be a "must" for all Alumni.

The other officers elected to support Bill during the next year include: George Cunnigham'27, First Vice-president; Bob Hiller'31, Second Vice-president; Phil Herrick'24, Secretary; Jim Cullison'41, Treasurer; Henry Paronelli'35, Assistant Secretary; Frederick W. Grantham'25, Assistant Treasurer.

Alumni attending the dinner meeting were: Zenas M. Briggs'00, Hiram E. Beebe'10, Page Golsan'12, Francis B. Morton'13, Walter B. Rivers'15, Douglas McLellan'17, Samuel Rubin'18, Bernard S. Coleman'19, Maximilian Untersee'19, William R. Hainsworth'21, Samuel Lunden'21, David O. Woodbury'21, Russell Collins'23, Henry Y. Satterlee'23, Philip K. Bates'24, Rockwell Hereford'24,

William H. MacCallum'24, Nicholas A. Draim'25, Finley Laverty'25, Daniel Bloomberg'26, Gilbert Delvaille'26, George Cunningham'27, Hilda Young'27, Robert Hunn, Jr.,'28, Ralph B. Atkinson '29, Robert E. Hiller'31, John Navas'32, Gustave E. Kidde'33, Page Golsan, Jr., '34, Carbon C. Dubbs'35, Oscar Hakala '35, Henry Paronelli'35, Richard DeWolfe '36, Robert M. Osborn'36, Frank E. Carney'37, Albert V. Finn'37, Milton Karr'37, Lewis P. Reitz, Jr.,'37, Stanley D. Zemansky'37, Howard Britton'38, Harold H. Strauss'38, Harry Pearlman'39, Harold W. Pope'39, Andrew F. Kay'40, Leo Maas, Jr.,'40, James Cullison'41, Arthur R. Beckington'46, Jonathan Edwards'44, Franklin C. Loesch'44, Arnold W. Martin '44, Selma C. Swift'45, Everett Waldron '46, Robert Moon'47, William Whitehill '47, John Dingler'48, Donald H. Nelson, Jr.,'49, Stephen F. Wilder'48, Richard F. Amon'49, Richard A. Batchelder'49, Walter East'49, Joseph Sableski, Jr.,'49, Harry Houdyshell'50, Kenneth Rogers'49, Jacob Willner'50, and Richard Lee Brown '52. — PHILIP A. HERRICK'24, *Secretary*, 737 Terminal Street, Los Angeles 21, Calif. JAMES S. CULLISON'41, *Assistant Secretary*, 6567 West 84th Place, Los Angeles 45, Calif.

Washington Society of M.I.T.

The Society's February 11 meeting was held at the large and beautiful main auditorium of the United States Department of the Interior, when Dr. Wernher von Braun held his audience of more than 700 M.I.T. Alumni and their guests spellbound for one hour and 50 minutes by his lecture on "Space Travel, Satellites and Space Stations — How Soon?" Literally one could hear a pin drop, so intense was the audience's interest in these fantastic effects in space.

Dr. von Braun, of *V-2* fame as codesigner, presently technical Director, Army Ordnance Guided Missile Development Group, Redstone Arsenal, Huntsville, Ala., is a foremost exponent of multiple stage "rocketry" as the most effective future deterrent to a World War III. An article by Dr. von Braun entitled "Man on the Moon—The Journey" was featured in the October 18, 1952, issue of *Collier's* magazine. A series of articles on the subject of man's future in space based on the work of Dr. von Braun and other scientists in that field have subsequently been published in other issues of *Collier's*.

In his talk before the Alumni at our meeting on February 11, Dr. von Braun discussed the limitations of atom bombs and land-to-land guided missiles as deterrents to war, and expressed the view that these types of weapons would, in the not-too-distant future, assume a secondary role as war deterrents, akin to the status of battleships. New horizons are needed for new and more effective deterrents, and space rocketry of sending out masses beyond the stratosphere and establishment of livable space stations as satellites in fixed orbits hold out a most promising and challenging reality.

After a fascinating and captivating illustrated presentation of the developments in rocketry, of the numerous basic applications of theoretical mechanics, of the complex heat transfer problems, of the establishment of the space stations as housing quarters, of new toxic and health problems introduced in living at distances of hundreds of miles beyond the earth while traveling at supersonic speeds of 18,000 miles per hour, and the rotation of the station itself on its own axis, of the necessity of humans having to learn some new methods of walking and new modes of daily habit patterns, and the factors which avail rocketry as instruments of war, Dr. von Braun predicted that space satellites could be established facts in the short period of 10 years at a cost of several billions of dollars.

The return to earth from free orbital flight at speeds of 15,000 miles per hour presents formidable problems. To retard such a rocket outside of the atmospheric limits of the earth requires the same energy as that of obtaining free flight. The size of such a rocket to accomplish this deceleration would be as large as the Empire State Building. The alternative is to use the earth's atmosphere as a natural friction brake which, however, would create temperatures of 1,000 degrees F. all over the rocket as it enters the atmosphere. Protection against these high surface temperatures, however, can be provided for by means of insulation of the type of glass fibers or double layers of steel.

Dr. von Braun stated that the Russians are not neglectful of the developments of rocketry, and he made a stirring plea that the control of space by the United States is urgent and should receive immediate support from government, that it requires forthright decision, immediate scientific planning and initiation of formal execution, similar to the 1940 decision by the President to support research and development of the atomic bomb. There appears to be considerable lethargy in the United States regarding research and development in space rocketry, and Dr. von Braun pleads that all groups interested in maintaining the peace, pick up the ball and assist in crystallizing support for a positive program.

In reply to a question from the floor, Dr. von Braun also developed the peacetime contributions of space satellites. The possibilities of future development of travel to the planets is comparable to the spirit of developments by Columbus and explorers of that era in simply starting out on their voyages and ultimately discovering new continents.

Through the diligent and individual labors of our Secretary, Horace E. Weihmiller'25, and the financial sponsorship of the Ahrendt Instrument Company (William R. Ahrendt'41, President), College Park, Md., we have just issued the *1953 Directory of the Washington Society of the Massachusetts Institute of Technology*. It is a 12-page document, 8 x 11, three columns per page, giving the name, class, home and business addresses and business connection for each alumnus. Approximately 1,250 names are listed in the *Directory*. — SAMUEL H. MANIAN'22, *Review Secretary*, 5707 26th Street North, Arlington, Va.

CLASS NOTES

• 1886 •

The Secretary has received a clipping from the December 31, 1952, issue of the Salem, Mass., *News* giving an account of the celebration, on the day previous, of the 86th birthday anniversary of Henry P. Benson of Salem, a member of the M.I.T. Alumni Association. Mr. Benson was graduated in 1886 from the School of Mechanic Arts, an affiliate of the M.I.T. He was chosen president of his class in 1936 and treasurer in 1941, which positions, I believe, he still holds. The celebration of his 86th birthday was a simple affair attended only by his close friends and relatives.

The clipping speaks of his valuable public services as a member of the Common Council and Aldermanic boards of the city of Salem, and also as "one of Salem's greatest mayors," which latter position he filled in 1916 and 1917 when he served with marked ability following the great Salem fire of 1914, directing the problems of reconstruction, financing and planning for the rebuilding of the city after that terrible conflagration. He served as director and president of the Naumkeag Steam Cotton Company, and as director of the Salem National Bank at the time of its merger with others to form the Naumkeag Trust Company of Salem. The clipping also makes reference to the then-approaching 60th anniversary of Mr. Benson's wedding to be celebrated on January 11, 1953.

The Secretary of '86 is glad to be able to present a news item from some member other than himself, as he is finding that subject rather shopworn. — ARTHUR T. CHASE, *Secretary*, Post Office Box 4, Island Creek, Mass.

• 1891 •

The Alumni Register reports changes of address of C. Hancock Wood, Cornelian Hotel, Decatur, Ala., and Francis B. Choate, 301 Engle Road, San Mateo, Calif. It also reports the death of Edgar L. Hamilton on May 4, 1950. I find he was listed in our class roster of 1916 as president of the Pilcher-Hamilton Company, wholesale paper dealers in Chicago, and again in 1941 from Carmel, Calif., but not in 1946. I am sure we will all remember him as a perfectly grand fellow who played football for the glory of '91.

Another fine letter from Walter Douglass indicates that he is well and is enjoying farm life on his place in Dunstable, Mass. He is undoubtedly working on some hobby old or new, for he does not know how to be idle, but does not say what it is at this time. He does report that one of his fine masterpieces of miniature furniture has been accepted by the Currier Gallery in Manchester, N. H., as a permanent display. I have seen it at his home, and it is a beautiful and very skillful reproduction of a completely furnished room, accurate in every minute detail of its period, including the metal trimmings,

all the work of his own hands. This piece is probably the climax of several years of patient and skillful work in making accurate miniature models of period furniture. I am sure it will be well worth a visit to the Currier Gallery when you happen to be in Manchester.

Your Secretary has just received a very interesting package of mail from Gorham Dana, another '91 man who just has to keep busy doing things. This package contained a bundle of very interesting letters from Robert Ball extending over a period of years. Digests of several of these letters have appeared in previous Reviews. They all reflect loyalty to M.I.T. and memories of "the good old days," with comparative comments on the virtues of scientific schools attached to universities and those maintained as independent institutes.

He is evidently enjoying retirement by working in his garden and toying with higher mathematics in his leisure time. He expressed regrets that he was away when Dr. Compton received his honorary degree from the University, but was much pleased by the opportunity to entertain President Killian and wife when they were in England. He has had to put off a contemplated six-months visit at his daughter's in Kenya due to the racial unrest down there. He enclosed a recent news clipping which reports that a Chapel of Unity connected with the Church of St. Georges at Graves End had just been opened as a memorial to Princess Pocahontas, who died there 335 years ago.

The package also contained typed copies of two particularly interesting papers involving a lot of research which he prepared for the Brookline Historical Society – one, a synopsis of the life of Professor John D. Runkle, a great favorite of our Class of '91. The Runkle paper serves as a pleasant reminder that our beloved Professor John D. Runkle was one of the prominent founders of M.I.T., and was the professor of Mathematics when the Institute opened in the Mercantile Title Building on Summer Street, corner of Hawley, in February, 1865. He became acting president at request of President Rogers, due to his illness, and served for 10 years of M.I.T.'s most difficult time. He contributed greatly to the benefit of M.I.T. through the rest of his active life by travel and outside activities.

The other paper (25 typed pages) outlines in a good deal of detail the history of Brook Farm in West Roxbury, and several other socialistic communities formed in this country and in England about 100 years ago, to enjoy and demonstrate the advantages of community living, with property held in common, and everyone sharing in the work of the community for the common good. These many and varied experiments to establish ideal living conditions all ended in failure in periods of from eight months to eight years. Gorham closes the paper with the following conclusions. "Brook Farm and the many other socialistic settlements of that period which lasted but a short time – mostly not over six or seven years – all point to the conclusion that communism is not a normal or successful form of government in a world constituted as is ours for any considerable length of time. We can only hope that Russia will find this out before it is too late to save our civilization."

He has very graciously offered to loan the typed copy of these papers on request of any of the class members. In accordance with his directions, I am mailing them to Channing Brown who will return them to Gorham. – FRANK W. HOWARD, *Secretary,* Bemis Associates, Inc., Post Office Box 147, Watertown 72, Mass.

• 1892 •

The Secretary has little to report except that the Class was represented at the mid-year Alumni Association dinner at Walker Memorial by Arthur Ober and the Secretary, who listened to a very interesting program in which Dr. Compton gave a report of his travels through student centers in Great Britain and France, and an account of some of his research work by Professor Edgerton'27, illustrated by a large number of pretty photographs. Edward Schwarz'23 also entertained us as an expert illusionist.

Chick Kane'24 reports that he has already heard from eight members of our Class as contributors to the Alumni Fund. Hope before spring several more may be added. – CHARLES E. FULLER, *Secretary,* Box 144, Wellesley 81, Mass.

• 1893 •

The committee in charge of arrangements for the 60th anniversary meeting of our Class recommends that we undertake nothing more elaborate than a dinner at the M.I.T. Faculty Club in Cambridge. As overnight accommodations can be obtained at nominal cost in one of the student dormitories, as well as single meals (cafeteria style), it will give anyone who wishes to spend the night an opportunity to compare the greatly expanded educational facilities of the Institute today with what was available for us in 1893.

It is assumed that early June will be the best time to hold the meeting, and notices giving the time and cost will be mailed to all members of the Class at a later date. – FREDERIC H. KEYES, *Secretary,* Room 5-213, M.I.T., Cambridge 39, Mass. GEORGE B. GLIDDEN, *Assistant Secretary,* 38, Chauncy Street, Boston 11, Mass.

• 1894 •

It is always a matter of deep regret when a class secretary has to report breaks in the ranks; yet, in the older classes, this is inevitable. The present report is an instance of this kind.

Leslie Rogers Moore died at his home in Concord, Mass., on January 10, most unexpectedly. He had an attack of pneumonia in November and seemed to be making such a good recovery that he and his wife had plans all made to go to Florida in a week. Then suddenly, he passed away. He had enjoyed a long and interesting career. The year after his graduation, he was assistant in industrial chemistry at the Institute. In 1895 he went to Germany and spent four years in graduate work, chiefly at Heidelberg, and on his vacations traveled widely in central and southern Europe. On his return to America he held positions in the field of chemistry, and the following year was instructor in general chemistry at Technology. In 1909 he became assistant inspector of gas and gas meters for the state of Massachusetts, and in the next three years also acquired a degree in law at Northeastern University. His service to the state was continuous and excellent, and in 1935 he was made director of the Department of Public Utilities of the Commonwealth. He retired in 1941 at age 70. Thereafter, he lived in Concord most happily with interests in gardening and floriculture, vacations in Maine, and he spent at least one winter at Mt. Dora in Florida. Forty or more years ago, he married Miss Minnie Coolidge, a graduate of Wellesley in 1899, who survives him. There were no children. He was always a student, and was greatly liked by all who knew his sterling qualities.

Three days after learning of Moore's decease came the sad news of the death of Charles Arthur Meade at the Vassar hospital at Poughkeepsie, N.Y., on January 14, eight days after his 80th birthday anniversary. For several years Meade had been extremely lame with a form of arthritis, and had been hospitalized for three weeks before the end came. He had lived in Poughkeepsie with his daughter, Miss Elizabeth Meade, a landscape architect and assistant professor of art at Vassar College. His wife, Isabel Maloney Meade, died in 1940.

Meade was born in Brookfield, Mo., January 6, 1873, but most of his boyhood was spent at Millerton, N.Y., where the family homestead was maintained for many years. After graduation at Williston Academy in Easthampton, he entered M.I.T. in 1890, and took the Course in Civil Engineering. During student days he was a president of the Class, and was a member of Phi Beta Epsilon Fraternity. On graduation he became a member of the famous Colonel Waring's street-cleaning organization in New York City, and from 1909 to 1918 was secretary of the Purchasing Committee of the American Agricultural Chemical Company in New York. In 1918 he joined the E. I. du Pont de Nemours Company in Wilmington and as vice-president, 1920-1924, he was very active in the development of American dyes. Until that time, Germany had held a practical monopoly in this field. After a year of residence at the family estate in Millerton, he became president of the Deepwater Coal and Iron Corporation in Jasper, Ala. He retired again to Millerton in 1930, but later established residence at Poughkeepsie, and maintained a consulting office in New York City. With increasing disability he retired and lived at 108 College Street in Poughkeepsie.

Surviving, in addition to his daughter, is a son, Colonel John Meade, military attache at the American embassy at Ankara, Turkey. Widely known and very highly regarded by his classmates, his demise will cause sorrow to those of us who remain, and the sympathy of all is expressed to his family, for another of our men of leadership is gone from us.

By some unusual coincidence, news of the death of William Reed-Hill in 1947 was received at about the same time as

the foregoing two items. Reed-Hill entered M.I.T. with the Class of '93, but throughout the upper years was a member of our Class, in the Department of Architecture, which profession he followed throughout his life. A record of his principal positions follows. Beginning in 1895, he was associated with John Scott, an architect in Detroit, where he practiced for about 25 years. In 1920 he was architect of the office of the United States Naval Inspector at Detroit, but in 1925 became architect of the Maritime Hydraulic Oil Service in New York City. In 1930 he was living at Beechhurst, Whitestone, Long Island, but doubtless practiced in New York. In 1935 he was engineer of the Hard Tank Fuel System of New York City, but later became a partner in the firm of Evertz and Reed-Hill in that city. Never having participated in affairs of our Class, he was not widely known to our members following graduation. – SAMUEL C. PRESCOTT, *Secretary*, Room 5-213, M.I.T., Cambridge 39, Mass.

• 1895 •

It is interesting to learn of the doings of the sons of some of our '95 classmates. Gerard Swope has a son named Gerard Swope, Jr., who has been appointed vice-president of International General Electric Company. He is head of the company's law department. Graduated from Dartmouth College and Harvard Law School, he joined General Electric in 1940, as counsel for the appliance and merchandise department at Bridgeport, Conn. From 1942 through 1945 he served in the Navy, in which he attained the rank of commander. He joined International General Electric Company in 1946.

Mr. and Mrs. Swope have a summer home in Woods Hole, Mass., and are identified with the activities of their community. He is president of the Woods Hole Oceanographic Associates and president of the Marine Biological Laboratory. He married the former Marjorie Park, daughter of the late Mr. and Mrs. Franklin A. Park, Technology '95. They make their home in the former Bradley House on Juniper Point.

Note, please, that your Secretary has not changed his address, and will be glad to hear from any and all the mates of '95, as to their doings. – LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass.

• 1896 •

The Midwinter Alumni Meeting under the caption of "As you like it" was outstanding in several respects. Henry Grush, Fred Rundlet, Fred Damon, and John Rockwell were in attendance, and were rewarded in the unfolding of a mixed program. More detailed reports will appear in The Review, but we wish more of our classmates could have witnessed the remarkable demonstration by Mr. Harold Edgerton along the line of his specialty (rapid shutter action). Dr. Compton in his review of Institute activities, disclosed the $500,000.00 Rockefeller fund for the advancement of biological studies. His description of his recent trip to England and the continent revealed the ever expanding influence which our beloved Alma Mater fosters. We can continue to be proud of this heritage, and should support our loyalties with financial assistance commensurate with our ability to aid in the ever expanding program of accomplishments.

In the passing of Edward Mansfield the Class has lost another distinguished member. You will all recall his activities during our undergraduate days as manager of varsity football team in his senior year, and as '96 class poet. He always had a cheery word when the secretaries had occasion to seek his assistance. We shall all miss him. The following is a quotation from a newspaper clipping:

"Edward Stacey Mansfield of 15 Cabot Street, one time associate of Thomas A. Edison, and retired Boston Edison Company employee, died suddenly at his home Thursday morning, December 18, after a brief illness. . . . Mr. Mansfield was the son of Edward Galen, and Rebecca Stacey (Breed) Mansfield. He was born November 11, 1870, in Wakefield and grew up in that town, graduating from Wakefield High School and from M.I.T. in the Class of 1896. Soon after college he worked for the General Electric Company in Schenectady, N.Y., and was for a time in close association with Thomas A. Edison, the connection giving him the honor of membership in the Edison Pioneers, an association of those who had worked with the great inventor.

"After leaving the General Electric, Mr. Mansfield joined the Boston Edison Company, where for many years before his retirement he was a bureau head. Active civically, he served on the Finance Committee from 1915 to 1918, acting as chairman from '16 to '18. He was a member of the Water and Sewer Board from 1920 to 1923 and served as a town meeting member . . . for many years. During the war years he served as publicity director for the Winchester Red Cross Chapter.

"Mr. Mansfield was a member of the Winchester Country Club and of the Engineers Club of Boston. He was also a member of the Wakefield Baptist Church. A pleasant, friendly man with a quiet sense of humor and a very real appreciation of the other fellow's problem, he endeared himself to many, and was held in esteem by all who knew him.

"On June 14, 1905, Mr. Mansfield married Elizabeth Osborn Bancroft of Peabody, and after a brief residence in Boston they came to Winchester in 1906. Besides his wife, he leaves a son, Edward Bancroft Mansfield of Winchester; a daughter, Mrs. Richard W. Moore of Attleboro; and three grandchildren, Edward Stacey Mansfield, 2nd, and Diana Bancroft Mansfield, and Sarah Bancroft Moore."

A card received from Hattie Gates from Altamonte Springs, Fla., with this note, "This is my eighth winter here. Snow and sleet changed to sunshine and waving palm trees." Another letter from Victor Shaw which you will find most interesting: "Some celebration you had on your 80th, with the surprise party and gift of silver tray inscribed by so many of your amigos and classmates. And many thanks for sending me a typed notice of the party, also the Xmas greeting card enclosing your congrats on my own 80th. Swell reply you gave to us all regarding the party, tray, and many letters from all of us as well. I much regret I had to be absent.

"In your mimeographed 'reply,' you comment: 'I find that I've been singularly blessed with a background of physical fitness . . .' and this happens to be also true in my own case . . . Mine may in part be due to youthful athletics, coupled with a subsequent rugged outdoor life in far lands, but also may be some inherited stamina from long-lived New England ancestors on both sides of my family, and also, that I was early trained to temperance in all things. Have never been able to account for my early yen to roam, unless it stemmed from my abiding preoccupation, nature at her wildest – looking for places never ruined by man – strange people, game, fish, minerals. But I've never thought classmates working at their professions and accomplishing much would have any interest in these matters so engrossing to me. I used to correspond quite a lot with that grand fellow, Charlie Locke, did some research for him once, called on him at the Institute the last time I went east, back in 1923. And he used to put some of my letters into class notes in The Review. However, I haven't bothered you in recent years assuming I've little of interest to write. But I note in our January Review that you've asked for a biographic cross-section from the 'modest' members of our Class. So, whether I'm in that category or not, maybe mine might be all right for an 'obit' when the old gent with the scythe takes a cut at me. You've got me in our class history of some 15-20 years ago, but I can take it from there – for what it's worth.

"After selling my Colorado mine, I went back to Alaska, for I had fallen in love with it when there in the Klondike stampede. This was the spring of 1924, and my wife and I planned to remain indefinitely. There I picked up my professional writing, my source of income coupled with hunting, fishing, and prospecting making out nicely until my wife developed heart trouble that took us back to the states, and eventually to California where I lost her in 1938. Here I have done geological surveying and in Arizona and in Nevada, incidentally debunking the myth of the 'Lost Dutchman' mine as being in the Superstitution Mountains area. Writing confined to fact, tales and articles on geology and mineralogy for *Earth Science Digest* and like magazines. Also, have kept up my connection with two magazines as mining editor, trailing my muse as a self-made mining engineer, very obscure. Am still doing same. . . .(N.B. – am member of Southern California M.I.T. Club)."

Change of address: Marshall O. Leighton 910-17th Street, N.W., Washington, D.C.; Charles E. Batchelder, 375 West Arenas Road, Palm Springs, Calif.

Bill Coolidge has become a noted traveler. He has explored Central America several times, and a card just received from Zululand finds him enjoying Africa's wildlife in his extended auto trip. "Dorothy and I having a wonderful trip—a three months safari, Cape to Cairo—6,000 miles of it by auto. We've seen 50 (water buf-

falo) this A. M. plus many others. Best regards to you and Fred."

A communication just received (February 9) discloses the plans for the midwinter dinner with the New York contingent. Fred Damon will be unable to make it, although much improved over last month's report. The date of February 26 will find us at the New York Yacht Club for a noon repast. He speaks of Bill Coolidge being on an extended trip into Africa, and of Paul Litchfield vacationing on his ranch in Arizona. However, some six to eight expect to be present and enjoy the hospitality which John always supervises. — JOHN A. ROCKWELL, *Secretary*, 24 Garden Street, Cambridge 38, Mass. FREDERICK W. DAMON. *Assistant Secretary*, Commander Hotel, Cambridge 38, Mass.

• 1897 •

Commander Frederick A. Hunnewell, USN, retired, Course XIII, was married in Washington, D. C., on Jan. 31 to Miss Laura Gilman. We understand that Fred and Mrs. Hunnewell enjoyed a trip in the Caribbean Sea late in February.

Harry Worcester and Mrs. Worcester left Boston on February 12, for a month's stay at the Lake Shore Plantation Inn, Lake Wales, Fla. Henry M. Loomis, Course V, retired, spent some time during the past winter at the Hotel Sarasota, Sarasota, Fla. The Secretary wishes that these fellows who go to Florida or Cuba (please note, Irenee) would send him some interesting, though not necessarily truthful, letters for publication in The Review, telling of the game-fish they caught, the horses that they bet on and which won, the mermaids they met, and so on. It would in part compensate him for having to stay holed up for the winter here in New England and searching his soul for copy to send to the Class Notes column in The Review.

Since financial items seem to be quite the thing in news columns today, we thought it might be well to write up one for this issue of The Review. Ninety-Seven has not called for or collected any dues since 1946. Our treasury is not empty as we have on hand $330.20, but judging from past collections we know that the response to our call will not be so large as to embarrass us, so we thought it would be wise to become a little more liquid (using the word in a financial sense). Hence the call for dues. At the luncheon last June held at the Algonquin Club in Boston, one member of the Class very generously and privately gave $40.00 to the class treasury towards general expenses. Such an example of class loyalty might well be followed by others. Now, we are calling for dues of $5.00 from each member of the Class. Please make out your check to John A. Collins, Jr., Secretary, and mail it to him at his home address: 20 Quincy St., Lawrence, Mass. His mailman is a husky fellow, and has assured your Secretary that he will be able to handle the increased large amount of mail that will follow shortly (?) after you fellows read this item. No receipt will be sent after your dues are received. Your canceled check will serve as a receipt. Now go to it, classmates, and send those dues in at once, and if anyone wishes to send more than the five dollars for which the Secretary has asked, the latter's joy will be unbounded. But whatever you do, except to put this request aside and forget all about it, do it now. — JOHN A. COLLINS, JR., *Secretary*, 20 Quincy Street, Lawrence, Mass.

• 1898 •

This month our class notes are largely a matter of gossip, for the classmates are taking more leisure each year, have more time to reflect on the past, and have found comfortable places to enjoy the milder climate of Florida and California. As gossip is not too correct and may be unreliable, subject to errors and omissions, you must write in your complaints and corrections.

Year-round residents of Florida are Albert W. Tucker, III, of Daytona and Colonel Harold W. Jones, VII, of Orlando. Winter guests include Arthur A. Blanchard, and wife, Roger W. Babson and wife, Edward S. Chapin and George T. Cottle. They are meeting at Lake Wales near the Bok Tower and most surely are planning some good things for our 55th reunion. Let's all make our individual plans for that great event.

Our president, Daniel W. Edgerly of Chicago on a trip West and to the Orient, writes from Los Angeles about our Southern California residents, "Mrs. Maud Underwood, widow of our classmate John D., gave a luncheon at the famous Marine Club in La Jolla. So, with Howard Bodwell and his wife, we talked over old times and about classmates." The Bodwells are planning to be with us at our 55th. His oldest son, Howard, Jr., is one of the divisional superintendents at the new Fairless plant of the U. S. Steel Company in New Jersey. The other son, Harrison, is with the Consolidated Vultee Company, San Diego, who are now building B-36 bombers. Our classmate Howard is rated as a world traveler having been in Chile, Argentina, and Mexico in building steel plants, these in connection with the American Steel and Tin Plate Company of Pittsburgh with whom he was working for many years.

Everett N. Curtis formerly of New York City, went West to retire and is now practicing law in San Diego. A yearning for the West was born in him, as his father and three brothers sailed by clipper ship from New England ports for the Orient, via San Francisco, where Everett's parents left the party before he was born. He is our only '98 Californian.

Bill W. Stevens of San Diego, now well and happy, also is a world traveler. He made an early start in Chile, West Indies and Europe, then China for four years, Japan for 10 years, then two for Standard Oil Company in New York City.

The Midwinter Meeting of the Alumni Association was held this year February 5 in Walker Memorial and was attended by Mrs. Pliny B. Morrill (known to us as Eva Crane) and her son Theodore C., Class of '31; Ernest F. Russ with two sons, J. Rodman and Philip, and two grandsons, J. Rodman, Jr., 20, corpsman at Chelsea Naval Hospital and Sherman, 16. The five Russes enjoyed the program immensely, the addresses given on a plane that the younger generation could appreciate, and one was "out of this world" as a sleight-of-hand performer and expert on textiles.

In the February Review we reported the passing of Walter H. Lee of Cincinnati. The New York *Times*, November 10, 1952, says, "Walter H. Lee, architect, died in Cincinnati yesterday at the age of 75. He and his partner, Rudolph Tietig, drew the plans for some of Cincinnati's best known structures, including The Doctors Building, Chamber of Commerce Building, Rockdale Avenue Temple, Christ Hospital Nurses' Home, Municipal Garage, and the Knox Presbyterian Church. He and Mr. Tietig celebrated the 50th anniversary of their partnership this year.

"Mr. Lee was a graduate of the Massachusetts Institute of Technology, a member of the American Institute of Architects, and a Mason. He is survived by his widow, Mrs. Marie Leighton Lee; two daughters, Mrs. Mary Lee Glazier of Richmond, Va., and Mrs. Margaret Lee Thompson of Chevy Chase, Md.; a brother, Robert W. Lee of Cincinnati, and two grandchildren."

His partner, Rudolph Tietig, sent us this interesting historical tribute, "It is with the deepest sorrow that I report the death on November 9, 1952, of Walter H. Lee'98, my friend for 60 years and business partner for 50 years.

"Walter was born in Cincinnati on February 1, 1877. Ten years later his family moved to the village of Home City, adjoining Cincinnati, where he since made his home. He attended the local public grade schools, after which he went to the Cincinnati Technical High School, where I first met him, and from which we were graduated in 1894. His father was in the sheet metal and roofing business and had patents on a variety of products, for example, a peanut roaster frequently seen being wheeled along the streets of Cincinnati and undoubtedly elsewhere; also he had label No. I for the first fire-proof window approved by the Underwriters Laboratories, Inc.

"In the fall after being graduated from Cincinnati Tech., Walter and I enrolled in Course IV at M.I.T. We roomed together, first on Yarmouth Street, and in later years on St. Botolph Street.

"Walter was a serious and industrious student, working during each summer vacation in the office of Cincinnati's then leading architect. After graduating, he worked for four years in the same office, while I was in two prominent architects' offices in New York City. During those years we would get together occasionally, and in November, 1902, opened our own office in Cincinnati under the firm name of Tietig and Lee, and I am proud to say this firm continued uninterruptedly for 50 years until Sunday, November 9, 1952, when Walter, very suddenly and without any warning, passed away at his home.

"He was a member of the American Institute of Architects, of the Engineers Club, also of several Social Clubs. In 1904 he married Marie Leighton, who survives him, as do two daughters, Mrs. Mary L. Glazier of Richmond, Va., and Mrs. Mar-

garet L. Thompson of Washington, D. C., both graduates of Greenbrier College, Virginia, in 1928 and 1931 respectively. Mary's husband is Richard L. Glazier, chief actuary for the Life Insurance Company of Virginia, Richmond. Margaret's husband, Glenn Thompson, is the Washington correspondent of the Cincinnati *Enquirer*.

"Most of our architectural work has been in Cincinnati, where we were the architects for a large number of office buildings, schools and college buildings, hospitals, churches and residences. We also did some office building and industrial work in Memphis, Louisville, New Jersey and Indiana.

"It is needless to say that I miss him greatly, and shall for the balance of my life. He was a fine and able man, as well as a very capable architect. There is one outstanding occasion which often came to our minds and then talked about, and that was when we, accompanied by Mrs. Lee and Mrs. Tietig, attended the 50th Reunion of the Class in 1948."

About the time you are reading this, our 55th Reunion plans will be completed and in your hands. Time waits for no man!! Come to our 55th!! You'll never regret it!! — EDWARD S. CHAPIN, *Secretary*, 463 Commercial Street, Boston, Mass. ELLIOT R. BARKER, *Assistant Secretary*, 20 Lombard Road, Arlington, Mass.

• 1900 •

The Midwinter Meeting of the Alumni Association was slimly attended insofar as the Class of 1900 was concerned. Lawley was there with his son, George; Leary with his son, Jack; Silverman, and Allen with his son, Kent. In spite of the small number of the Class present, the dinner, the addresses and the entertainment were greatly enjoyed.

Stan Fitch recently had the misfortune to fall in some unexplained way and crack a few ribs. We understand that he has made rapid recovery and is now back at work again.

We are planning to have our annual reunion at the Pines, Cotuit, Mass., June 16-18, immediately after Alumni Day. Anyone who goes to the Pines on those days will find some 1900 classmates there. We will have more information about this in the class notes next month. — ELBERT G. ALLEN, *Secretary*, 11 Richfield Road, West Newton 65, Mass.

• 1901 •

As this is being written about the middle of February, I am glad to report that responses to the Class Letter are coming in very well. If some of you who have not written me for a long time do not get busy, I shall have to report you to Mrs. Peterson who is my very able helper in digging out news. I am sure that you cannot resist replying to her persuasive letters.

I have recently received a very interesting letter from John Boyle which I will give you verbatim. It will set an example and show what I need for the class notes. He writes: "Once upon a time, someone conceived the idea of attracting the attention of the people of Mars by everyone simultaneously uttering a mighty shout, but never before was there such silence, for everybody was listening instead of shouting. As the class reporter of news, that is the situation you seem to find yourself in. (How true—T)

"I am still employed by the government and do my 40 hours a week with the exception of a month's vacation, although I am well beyond the retirement age of 70. In this respect the government is more flexible than private industry, for it permits re-employment after that age if the head of the agency certifies you have special qualifications. You are then known as a 're-employed annuitant.' I occupy the position of patent counsel in the General Services Administration. It employs countrywide about 25,000. It consists principally of (1) the Public Buildings Service that designs, constructs and operates government buildings; (2) the Federal Supply Service that buys civilian supplies for the government; (3) the Emergency Procurement Service that buys strategic materials. On the side it operates the Defense Materials Procurement Agency engaged in somewhat similar activities. The General Counsels office with which I am affiliated employs around 25 lawyers in Washington and others in the 10 regional field offices. I am also a representative of the Administration on the Government Patents Board which is charged with the duty of establishing a uniform patent policy with respect to inventions made by government employees.

"I am still enjoying good health and require very little medical attention, and so I figure I might as well be doing what I am doing as anything else. I have three children and eight grandchildren and am still living with the same and only wife."

A communication from Al Higgins tells us that he is very busy with civic affairs in St. Petersburg. He is the chairman of the new Pattern of Progress Program of the Chamber of Commerce, the initial phase of which is broadening the base of membership. He is also helping to raise money for an old folks' club house.

I will begin next month to report from the Class Letter Data Sheets. — THEODORE H. TAFT, *Secretary*, Box 124, East Jaffrey, N.H. WILLARD W. DOW, *Assistant Secretary*, 287 Oakland Street, Wellesley Hills 82, Mass.

• 1903 •

The Secretaries have had a few replies to their letter in regard to the 50th reunion — not nearly as many as we should have. A stamped and addressed reply envelope should get a large number of replies. Please look up the letter and let us hear from you. We are getting anxious. We did get a good letter from Walter Adams, II, who, unfortunately, does not expect to be in Boston for the reunion, but writes as follows:

"I have been retired since I left the Army at the end of World War II. Since passage of the reserve retirement bill, I have been placed on the retired list as colonel, U.S.A.R., after over 30 years of service in the regular Army and reserve. I would like to see some of my classmates as there are not many out here. Is any one interested enough to compile a new class book showing what we have done in the last 50 years? Although I was class secretary from '04 to '08, I have had very little contact since. I always turn to the '03 news in The Review when I see it. However. I cannot complain if I do not see much news, as I have not been supplying any information about myself for you. After graduation, I spent 15 years teaching engineering and then went into the Army in 1918 and remained for four years. As I had returned from China in 1913 to teach at what is now the California Institute of Technology, I transferred all my interests to California. Since then I have been back in Boston only in 1918-1922 and 1946. The last time I tried to contact you, but you were in Europe. However, I did see Aldrich and Atwood. It was about two weeks before Aldrich died. I remained in the Army reserve and was recalled to duty in 1940 as a colonel." Wish he could be east in June. Mrs. John C. Lee, nee Susan W. Shaw, died in December, 1951. We have just received this sad news. At present, Hewitt Crosby, Tom Sears, Frank Cox, Frank Reed, and Harold Norton are in Florida for at least a part of the winter. With Chadbourne in Pensacola, Lounsbury in Ft. Myers, Rapp in Gainesville, Lund in Melbourne, Florida is getting to be a popular place for '03. In southern California, Walter Adams is in Glendale, George Clapp in San Pedro, Fred Crosby and Schmidt in La Jolla, Dillon in Santa Monica, Eddy in Salinas, Graber, Morley, Newman, Sibbett, Sohier in Los Angeles, Hickok in Sierra Madre, Peters at Laguna Beach; we have quite a colony there. With 50 men within 50 miles of Boston, we in Massachusetts should turn out in goodly numbers to welcome those who are coming from across the continent. Let's do it. — FREDERIC A. EUSTIS, *Secretary*, 131 State Street, Boston, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, Box 103, South Wellfleet, Mass.

• 1905 •

If you could read the letters from your classmates telling me about their retirement, you would wonder whether they studied "double-talk" under Arlo Bates, for retirement (fortunately, I think) means just a change of occupation. For instance, Clarke Warren says that after a short lay-off, he has started a brand new business venture (he doesn't say what it is), but it just proves that life begins at seventyish. Roy Allen also retired a couple of years ago, then took on a temporary assignment, then made another try at loafing, but "a few weeks ago a chance came up to fill in the empty hours of my retirement, and I accepted it. Am supervising for the Board of Education and the Architects in the construction of an addition to and the remodelling of the Mechanicsville. N. Y. High School, a $1,600,000 project that will keep me continuously out of mischief (I hope) until September, 1954. It is only 26 miles from home (Cambridge, N.Y.), a nice little ride morning and night." And he adds that Christmas cards from three retired classmates, Ball, Spalding and Buell,

state that they just keep going. Buell's latest address is Box 269, Camden, Ark., but there is no news as to his new occupation.

Jim Barnes reports that he has retired from his teaching job at the Auburn, Alabama Polytechnic, but his new address Route 4, Box 769, Miami, Fla., makes me wonder if he is completing his desire to go into the raising of laboratory animals. Ros Davis admits retirement from his long assignment at Wesleyan University, but admits nothing except successfully battling with a siege of pneumonia recently, that is, outside of a nine-week, 11,000 mile trip to the Pacific Coast. Charlie Emerson just won't retire. I saw him in East Orange, N.J., on a trip there in January, and he had left the office long enough to have a second (abdominal) operation, was recuperating prior to the third. Since then I have heard that that was successful and apparently final, but his office sends him work each day, and he is in touch by phone daily. Charlie doubts attending a reunion of the Class before 1955, as his class at Beloit College, Wis., is having their 50th in June, and that's a must. He added that Jim Newlands, who was with us for a couple of years, was a classmate of his at Beloit. Jim is still very active in his sanitary engineering business at Hartford, Conn. Emerson, by the way, is of the firm of Havens and Emerson, New York City; they also have an office in Cleveland.

Frank Chesterman, after doing two herculean tasks in cleaning up city of Philadelphia and state of Pennsylvania projects is planning on a European trip to stay "as long as my money holds out." As Chairman of the Philadelphia Parking Authority, he helped obtain a decision from the Supreme Court which allows the construction of two central city garages which will cost a million and a half each, "only a start," Frank says, as many more garages are needed to solve the traffic problem. Roy Walker apparently has really retired, and the Lanston Monotype Machine Company, with whom he had been connected for 47 years and two months "threw" a big party for him last September. However, during vacations and spare time, Roy had rebuilt three country places, only to sell one and start another. He says, "What do I do now? There are 1,001 things on my slate, but the house I'm now living in is finished, about 20 miles above Philadelphia on the Schuylkill River and the latch-string is always out."

In spite of my attempt to get a representative group out for an important class meeting on February 5, only seven fellows joined me (in spite of the inducement of free drinks). However, Chick Kane'24, grand mogul of M.I.T. contribution planning, was with us for a while. Bob McLean, class agent, and Harry Donald, chairman of our 50-Year Gift Committee, were present and heard how the job has been done successfully. On the matter of electing a full complement of class officers, seemingly a proper scheme for a 50-Year Program, Sam Shapira introduced a motion that the office of President, Vice-president and Treasurer be imposed upon the present Secretary, all three extra terms to be served concurrently, and all present seemed to feel that the motion was seconded and passed unanimously. A polite suggestion to let Goldy do it, but authority enough, I believe, to allow the delegation of various duties to some unsuspecting classmates. Present also were Atwood, Damon, Babcock, Smart and Buff. Stevenson joined us at the Midwinter Dinner at Walker Memorial in the evening. Our class representation keeps up at the noon monthly meetings of the Boston M.I.T. Luncheon Club, nearly 20 per cent at the February meeting being '05 men, namely Eichler, Atwood, Fisher, Babcock, Files, Donald, Marcy, Kenway, Buff, Shapira and myself.

Several of our classmates have died since the last issue, Jim DeMallie, John Eadie, Bill Becker, Dave Bridges, Harry Wentworth and Al Gilbert. Because of the length of these notes, details on above will be reserved until next months' issue. — FRED W. GOLDTHWAIT, *Secretary*, 274 Franklin Street, Boston 10, Mass.

• 1906 •

The following members of the Class were present at the Midwinter Presentation of the Alumni Association at the Walker Memorial on February 5: Clarence Carter, Sherman Chase, George Guernsey, Tom Hinckley, Chester Hoefer, Charlie Kasson, and the two Secretaries. Carter would probably rank as the biggest stranger to the group as his engineering duties with Metcalf and Eddy have required much time away from Boston. He is looking forward to less traveling from now on and hopes to attend more Technology functions. Sherman Chase advised that his travels included an occasional contact with George Burpee in connection with the engineering of some of the projects in which they are jointly interested. Tom Hinckley advises that he retired from his position in the Tax Division at the State House in Boston last August. He and Mrs. Hinckley plan to continue residence at their home on Lake View Avenue, Cambridge. The class travelers, the Hoefers, are scheduling their next trip to Switzerland this coming May.

In the March issue, mention was made of the award of the Harold DeWitt Smith Memorial Medal in New York on March 19 to Herbert Ball. Since preparing that copy, a note has been received from Herbert advising that he is still teaching at Lowell Textile but getting close to retirement age. Incidentally, a similar medal had been awarded previously to Professor Schwarz, head of the Textile Division of M.I.T.

Malcolm Wight retired December 1 as assistant vice-president of the Hartford Fire Insurance Company. On November 28 he was given a dinner at the Hartford Club by his fellow officers. He had been associated with the company for 30 years. The following brief history of his business career is taken from a notice in the *Eastern Underwriter* of November 28: "Since 1922 when he joined the Hartford as special agent for Massachusetts and Rhode Island, his ability has been recognized by promotions, in 1928, as general adjuster in charge of fire claims, election as assistant secretary in 1932, and secretary in 1935. Ten years later in 1945 he was given supervision of underwriting activities in the New England territory and in 1950 was made assistant vice-president. He is a charter member of both the Loss Executives Association and the New England Loss Executives Association. Born and educated in Massachusetts, Mr. Wight specialized in civil and electrical engineering at the Massachusetts Institute of Technology and in the early years of his career engaged in civil engineering."

The March notes referred to the illness of Frank Benham's wife. Classmates will be saddened to learn that she passed away on February 8. Besides Frank, her family consisted of two sons, Frank, Jr., and Walter, and five grandchildren. Frank, Jr., is a builder in Littleton, Mass., and Walter is in the auditing department of the New England Telephone and Telegraph Company, Boston.

The Alumni Office has advised of the death of Guy O. Smith, VI, on July 2, 1951. The class record shows he has lived in the vicinity of Boston since 1913 and at the time of his death was living in Reading, Mass. He had indicated no interest in Technology affairs, so further information is lacking. — JAMES W. KIDDER, *Secretary*, 215 Crosby Street, Arlington 74, Mass. EDWARD B. ROWE, *Assistant Secretary*, 11 Cushing Road, Wellesley Hills 82, Mass.

• 1907 •

A brief news item in the Boston *Post* of January 7, 1953, states that Clarence Howe, our much honored classmate, has been further honored by the establishment of an engineering foundation in his name at Dalhousie University in Halifax, Nova Scotia. The $200,000 foundation was given to the university by a group of his friends and admirers. — Some of you may remember Herbert W. Hill, who was associated with our Class for only a year or two in the Course in Naval Architecture. I have recently learned through the M.I.T. Alumni Office that his present address is College Highway, Southwick, Mass. — The correct address for Hermann W. Mahr is No. 2012 The Berkshire, 4201 Massachusetts Avenue, N.W., Washington 16, D.C., in place of the address which was given for him in the list of our classmates which I mailed to you last November. During January Hermann wrote me a brief note saying that he returned to Washington in October from Cape Cod, where he had spent the summer. He went to Florida just before Thanksgiving time, amused himself by fishing, and returned to Washington early in January in time to be on hand for the inauguration of President Eisenhower.

Associated with our Class in the Course in Civil Engineering during our freshman year was a man by the name of Walter C. Rocheleau. A clipping from the Worcester (Mass.) *Telegram* of December 26, 1952, states that our former classmate died on December 25 at the age of 71. At the time of his death he was chief surgeon of Woonsocket, R.I., Hospital. He was a member of the American Medical Society, the first president of National Franco-

American Medical Association, and a past president of Rhode Island Medical Association. He graduated from Holy Cross College in 1903 and from McGill University in Montreal, Canada, in 1908. — BRYANT NICHOLS, *Secretary*, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, *Assistant Secretary*, 18 Summit Street, Whitinsville, Mass.

• 1908 •

The 45th Reunion of the Class is to be held at Snow Inn, Harwich Port, Mass., on Cape Cod, June 12, 13, and 14, 1953, with Alumni Day at Technology on June 15. Replies to the preliminary notice mailed in January indicate a good turnout. Charlie Steese of Harrison, Ark., writes, "You may count me to be present at Snow Inn, Harwich Port for the entire session as well as to return to Tech for the Alumni Day celebration." Howard Luther of Cincinnati, Ohio, writes, "I certainly plan to be in Harwich Port on June 12. I probably will spend August and part of September in the Harwich Port area, as has long been customary with me, but I will make a special trip in June, just to see some of the Class again." George Schobinger of Philadelphia, Lock Davidson of Melbourne, Fla., and Carl Bangs of Rome, Ga., who have never attended a reunion, are very hopeful of being with us in June. Kurt Vonnegut of Indianapolis, Ind., Gus Weiler of West Chester, Pa., and Karl Kennison of New York City, write that they want to come, if at all possible.

The second dinner meeting of the 1952-1953 season was held at the Faculty Club on Tuesday evening, January 20, 1953, with the following present: Jeff Beede, Bill Booth, Nick Carter, Myron Davis, Leslie Ellis, Sam Hatch, Winch Heath, Steve Lyon, Linc Mayo, Henry Sewell, and Joe Wattles. Bill McAuliffe was expected but did not make it. It was nice to have Bill Booth with us again, as he is one of the "Old Guard," but he has been unable to be with us for some time.

The fellows began showing up in the cocktail lounge about 5:30 P.M., where the principal item of conversation was Ike's inauguration at noon that day. With a quorum present, we moved on to private dining room No. 3, where each ordered the food he liked best. It goes without saying that the food was excellent, as usual at the Faculty Club. Linc Mayo told of the arrangements for our 45th Reunion next June at Snow Inn, Harwich Port, Mass., on Cape Cod. Following a general discussion, our "World Traveler," Joe Wattles, showed some fine Kodachromes taken last spring while he and Mrs. Wattles were attending the Rotary International Meeting at Mexico City. Included were pictures taken on shipboard between New York City and Havana, Cuba, and in Havana. They flew from Havana to Mexico City, stopping off at Merida, Yucatan. Joe's comments on the customs of the Mayas and their ancient civilization were most interesting, especially when illustrated by the excellent pictures of their temples, and so on. In addition to pictures taken in Mexico City, Joe had some fine shots taken at Acapulco on the west coast of Mexico. Joe and Mrs. Wattles are taking a Mediterranean cruise (Dutch Line) this spring, so we can look forward to more pictures in the future.

Myron Davis and Ted Joy attended the Alumni Midwinter Meeting on February 5, 1953, at Walker Memorial. Previous engagements prevented several of us from enjoying the steak dinner and the very interesting program which followed.

Henry W. Blackburn, Professor Emeritus of Syracuse University, and Mrs. Clara Burnham Webb of Randolph, Vt., were married on December 11, 1952, in Randolph Bethany Church Parsonage, Randolph, Vt. They spent the winter in Florida.

We are sorry to report the death during 1952 of the following classmates: Maurice L. McCarthy, Haverhill, Mass.; Lynn Loomis, East Orleans, Mass.; Howard Torrey, Reading, Mass.; Frank K. Belcher, Milwaukee, Wis.; Allston Dana, Ridgefield, Conn.; Henry V. Mack, Salem, Mass.; G. Temple Bridgman, San Francisco, Calif.; Wilfred A. Morris, Pittsburgh, Pa.; and Leon D. Howe, Clinton, Mass.

Make your plans now to be with us at our 45th Reunion next June 12 to 14 at Snow Inn, Harwich Port, Mass. on Cape Cod. — H. LESTON CARTER, *Secretary*, 14 Roslyn Road, Waban 68, Mass. LINCOLN MAYO, *Treasurer*, 47 Alton Place, Brookline 46, Mass.

• 1909 •

Last month we told of the sudden and unexpected passing of our president, Carl Gram, X. At that time the class notes were due before an adequate tribute to him could be prepared. Carl prepared for the Institute at Quincy High School where he was president of his class and held other important offices. We are all aware of the extent of his activities at the Institute. In athletics he was primarily a runner and made a name for himself on both the class and varsity relay teams. He also became the N.E.I.A.A. 220-yard record holder. In addition, he was captain of the track team, vice-president, and then president of the M.I.T.A.A. He was also a member of the Advisory Council, class president in our junior year, and second marshall on Class Day.

After graduation he remained one year at the Institute as assistant to Professor Fay in analytical chemistry. He then spent several years in factory production work with a number of firms. In 1918 he joined E. B. Badger and Sons, manufacturers of oil refining equipment, and was assistant to E. B. Badger, supervising, scheduling, purchasing, in charge of production, and hiring key personnel. In 1935 he went to England to start Badger's foreign business in that country, as well as in Holland and Germany. This was so successful that he returned to Europe in 1936 and again in 1937 to continue the work. He next organized Badger's Construction Department to enable it to handle a new and much expanded construction program. In 1940 he resigned and moved to Lancaster County, Pa., where he joined the Lancaster Iron Works and, at the same time, purchased a farm which he and his family operated. In 1944 he transferred to the Animal Trap Company of America near Lancaster. In 1948 the Foster Wheeler Company took advantage of his background and experience in England and elsewhere to engineer the largest oil refinery in Europe being constructed by the Anglo-Iranian Oil Company at Fawley near Southampton. Many of his experiences on this project have already appeared in the class notes. On returning to the United States in 1951, after completion of the refinery, he became manager of the New York office of an architect-engineers group of which Art Shaw's firm, Metcalf and Eddy, was a member. Here he dealt with USAF and the Corps of Engineers in connection with Blue Jay project.

Last May he went to Wright-Patterson Air Force Base at Dayton, Ohio, as a civilian assistant to Headquarters Air Materiel Command. The following letter from General W. W. Rawlings, USAF, the Commanding General, to Mrs. Gram is a fitting tribute to his abilities and accomplishments not only at the air base but to his life work as well. "We deeply regret the untimely death of your husband. May I extend to you the sincere sympathy of his many friends and close associates at Wright-Patterson Air Force Base. Carl W. Gram's loss is greatly felt because his contributions were many. The Air Materiel Command will continue to benefit from the service and advice he has provided during the past months. We felt extremely fortunate in attracting into the work of the Air Force a man with your husband's ability and background. We know and appreciate that his contributions to the defense of his country are long-standing and began before his work with the Air Force. Your husband had the quality of being able to serve in several different capacities. In the time we have known him, he has made significant contributions to the Purchase Survey Office and to management improvement in Air Force procurement. In each of these cases he has shown an ability to combine his experience with native intelligence to produce real and tangible results. Please accept the gratitude and the sympathy of the Air Materiel Command. We have benefited from his efforts. We deeply feel his loss."

In 1914 Carl married Hazel Alma Schlehuber who survives. There are three children, Carl W., Jr., who is New York representative of the Mason-Neilan Regulator Company of Boston, Alberta Gram Macdonald, who has a secretarial position in New York, and Gloria, who is a WAC in the supply department at Fort Dix. There is also a sister, Mrs. Harry M. Watts of Wellesley Hills. In 1916 we Alumni elected Carl president of the Class and surely feel grateful for his 37 years of leadership and service. In his life work Carl early became recognized as an engineer and manager who could be entrusted with large responsibilities. He never spared himself, and long hours were just a part of his routine. He was always most thoughtful of those who served under him, and they, in turn, were highly de-

voted to him. He had the highest ideals of professional ethics and conduct and stood by these principles uncompromisingly, irrespective of any consequences to himself. When he joined the Air Materiel Command, he was told of a heart ailment and was advised to diminish his activities. However, he could only see that there was still an important task to be done, and he continued to give his all toward its accomplishment. This undoubtedly was the way he wanted it. The Class has lost a good friend and leader, and we all shall miss him. Again the Class would like to take this opportunity to extend to his widow, Hazel, and the family, its deepest sympathy.

We were more than surprised to receive a note from Mrs. Laurence S. Winchester notifying us that Laurence, VI, had passed away very suddenly and unexpectedly on December 15, 1951, although his illness had extended over a long period. Although he lived in Reading, Mass., and was well known to the group of us who live in the Boston area, none of us even suspected that he had passed away, and the Alumni Office also had no record of it. With the co-operation of Mrs. Winchester, we are preparing a suitable tribute which will appear in the May issue of The Review.

Phil Chase, VI, sent us a clipping telling of the death on January 21 of Bob Doane, VI, at his home, Willowwick Farm, Line Lexington, Bucks County, Pa., at the age of 68. He was a native of Elmira, N.Y., graduated from Princeton in '06, and came to the Institute to study electrical engineering. He performed his thesis with Phil. Those of us in Course VI thought very highly of Bob. He was a good student and very friendly and co-operative at all times. Practically all his life work has been the production and applications of electric wires and underground power cables. Shortly after graduation he was employed by the Standard Underground Cable Company of Pittsburgh, and later he joined the Anaconda Wire and Cable Company at Hastings-on-Hudson, N.Y. During World War II he was loaned to the Navy by his company where he worked on wires and cables.

Along in 1947, Bob and a few of us of '09 had luncheon together in New York. Bob told of his then recent marriage to Marian Hall and his purchase of Willowwick Farm in Pennsylvania. He was then commuting to it on week ends and planned to spend all of his time there on his retirement from Anaconda in 1949. (Most of these activities have appeared in the class notes in recent years.) Mrs. Doane writes that Bob had a rather severe heart attack last summer but that he had been up and around for some time, and the doctor's reports were most encouraging, so that his going was most unexpected. She continues: "Bob always lived very quietly, and I think it is safe to say that he spent the last years of his life in perfect contentment. He had plenty of time to potter around the grounds and garden and to study the stock market which had always absorbed him. Again I want to thank you and Bob's classmates for your thoughtfulness." Besides Mrs. Doane, a son, George D. of Van Nuys, Calif., survives.

At the winter Alumni Meeting there were 12 of us present: Howard Congdon, I; Jim Critchett, XIV; Johnny Davis, II; Chet Dawes, VI; Earl Hamilton, XIV; Austin Henderson, I; Francis Loud, VI; Joe Parker, I; Art Shaw, I; Laurence Shaw, V; Henry Spencer, II; George Wallis, II. Also present were John Congdon, son of Howard and now a freshman, Bob Shaw, son of Art, now practicing surgery at the Massachusetts General Hospital, and A. K. Goodwin, a friend of Austin. We were more than pleased to see Earl Hamilton who is now with Gas Service, Inc. at Nashua, N.H. The larger attendance was due in large measure to the interest of local members in class affairs because of the recent loss of both the president and the secretary.

After the dinner we all adjourned to one of the lounges and held an informal meeting to discuss the class situation and to make proposals for future action. It was agreed that Jim Critchett should be president, Molly Scharff, XI, vice-president, and Chet Dawes, secretary. These officers were then unanimously nominated, their names to be submitted to the Class by a letter ballot as soon as is practicable. The first two nominations are most appropriate since Jim was class president in our senior year and Molly in our freshman year. The office of vice-president is new but it seems advisable at this time, and it will be incorporated in a class constitution that is being prepared. Until formally elected, these officers, we presume, are only "acting," but it will simplify matters if "acting" is omitted when reference is made to them, and, unless there is objection, this will be done. (It is also possible that the Class may elect others for these offices.) It was pointed out that in a little over a year we will be celebrating our 45th reunion, and Jim is appointing a committee to make the necessary arrangements. Also, our 50th reunion is all too near, and it is customary for the 50-year class to make a substantial gift to the Institute. Accordingly, Jim is appointing a fund committee to assume responsibility for this gift. He will also appoint a class agent to sponsor the annual contributions to the Alumni Fund. These appointments will be announced in the class notes. Art Shaw, who for a number of years has been class representative on the Alumni Council, has been reappointed by the Class for another five-year term.

Both Johnny Nickerson, II, and Jim Finnie, VI, were unable to attend our meeting, but we were more than pleased to receive the following notes from them. From Johnny Nickerson: "I received your post card yesterday upon my return from Europe and I am very sorry not to be able to attend the Alumni Meeting on February 5. I shall be in Washington. I get down there each week for about two days. Have been in Europe for Mutual Security Authority twice since summer. This last time I visited France, Italy, and Germany. Today I'm on my way to Syracuse. With both M.S.A. and my private practice I am not letting much grass grow under my feet. My best regards to those who show up and to yourself, Chet." From Jim Finnie: "Sorry I can't be with you on February 5 because my wife and I are taking off for Florida on January 31, hoping to escape the severe part of the winter. It is good of Jim Critchett to take on the duties of president, and I know he will perform them ably. Of course we shall miss Carl and Paul because they were always doing something for '09, the same as Charlie Main. With best wishes for a successful winter meeting." – CHESTER L. DAWES, *Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. George E. Wallis, *Assistant Secretary*, 185 Main Street, Wenham, Mass.

• 1910 •

It is with sorrow that I have to annouce the death of George Fox. The following is from the Cleveland *News*: "For more than 35 years a practicing architect here, George Fox since World War II had been associated with a brother, Henry Fox, in the architectural firm of George and Henry W. Fox in the Union Commerce Building. Mr. Fox, 70, a native of Berlin Heights, Ohio, died Tuesday (12/9/52) at Lakewood Hospital. He had studied architecture at Harvard University and at Massachusetts Institute of Technology before coming to Cleveland early in the century. He worked in several architectural offices here and, also, in that department of the Cleveland Board of Education. In 1921 he opened his own offices and later joined his brother, also an architect. He remained in the partnership until his death. Mr. Fox was a member of the Cleveland Chapter of the American Institute of Architects."

Gordon Holbrook writes as follows: "After my retirement six years ago from the shipbuilding industry, I became a special lecturer at the Newark College of Engineering in the Department of Management and Personnel. I am still at it, and my classes on three days and one night a week keep me in contact with young engineers and form a source of pleasure to myself and, I hope, of benefit to them. As my son and my daughter's husband, both in the Class of 1939 at M.I.T., are in aeronautical engineering, I have given up hope of being able to inject any salt water in their veins, and am presently working on the grandsons. I am also trying to keep abreast of the times by writing a portion of a text book on practical shipbuilding methods, being published by the Society of Naval Architects and Marine Engineers. Our local group of 1910 Alumni still meet once a month in New York for lunch, usually on the third Thursday of each month. We would very much like to have you join us when you are in town at that time. We have suffered some shrinkage in attendance due to deaths." I had a short note from Fritz Arnolt who is in the heavy contracting business in New Jersey.

The Class of 1910 was well represented at the Midwinter Alumni Meeting having Abbott Allen, Edmund B. Kiely, Carl Lovejoy, George Lunt, Murray Mellish and Chester W. Wilson. – HERBERT S. CLEVERDON, *Secretary*, 120 Tremont Street, Boston, Mass.

• 1911 •

Believe it or not, we had 11 men from the Class at the Midwinter Alumni Association Meeting at Walker Memorial the evening of February 5, with two junior '11 men also present. It was a most enjoyable affair, and details were presented in last month's "Institute Gazette" section. The 1911 contingent comprised John Alter, IV; George Cumings, VI; Dennie, VI, and his younger son, George; Henry Dolliver, I; Fred Harrington, I; John Herlihy, II; Morris Omansky, V, and his daughter, Frieda; Oswald W. Stewart, I; Ed Vose, XI; Emmons Whitcomb, X; and Aleck Yereance, I. "Ye Sec," as usual, led songs and cheers and this year put on a piano specialty, entitled "The Tech Show Story."

Morris Omansky's daughter — now Mrs. Frieda Cohen — was a graduate of M.I.T. in the Class of 6-45, you will remember. She and her husband and their two boys, aged four and two, live in Brookline near the Omanskys. George Denison and his wife and three and a half-year-old daughter live in Norwood, he being employed in Boston with the Bennett Publishing Company.

There was considerable enthusiasm among the group at our table about our proposed "off-year" informal class get-together at Snow Inn, Harwich Port on Cape Cod, the third week end in June, which, plus the enthusiastic response at the 1911 lunch in my honor on January 13, seems to assure the success of the affair.

By the way, Frank Thompson, the genial proprietor, has assured me that he and his wife "definitely would love to have as many of you 1911 people back as would care to come and will do our best to see that you all have a good time and also full stomachs."

"Our operational costs have risen since you were last here," Frank continued, "but since you are such boosters, it seems only fair that I quote what I think is the same rate you had in 1951, that is, $13.00 daily per person plus tax and tip at your discretion. This rate would be for some of our first-class rooms with private bath." What could be fairer?

"We have made some changes in the landscape," the letter goes on, "all of which we think are for the better. We have increased the size of our dining room by 50 per cent and have closed it in on two sides by glass. We also are currently in the throes of constructing a new unit having 10 large rooms with baths, to contain also a large living room with fireplace, plus a refrigerator to keep the orangeade cold. This house is 25 feet north of the existing Jetty House, located within 10 feet of the channel into the harbor." Gosh, I can hardly wait for June 19-20-21 to come!

Coincidental with the February 5 Meeting referred to earlier, Stanford H. Hartshorn, 3d, made his appearance in Richardson House, Boston, and is the first child of Mr. and Mrs. Stanford H. Hartshorn, Jr., of Gardner, and grandchild of Julia Hartshorn, widow of our classmate, Stan. Julia is spending the winter in Florida, and Stan, Jr., succeeded his father over a year ago as treasurer of C. H. Hartshorn, Inc., baby carriage and maple furniture manufacturers in "The Chair City."

General George Kenney, I, and your Secretary are currently having an awful time seeing each other — George was out of New York the day of my 1911 lunch there in January, and I was unable to get to Worcester for his Rotary Club appearance there 10 days later — however, we're now hoping definitely to meet at Snow Inn in June — George and Alice, and Sara and I.

Harold Robinson, I, had invited me to the Rotary meeting in Worcester that I couldn't attend, and Harold advised afterwards that George went over big — as a matter of fact, I later heard a transcription of an interview made during his Worcester visit. According to George: "We are sliding downhill toward a war, but when the bottom of the hill will be reached, I don't know . . . Russia will name the date."

His trip to Worcester was primarily to help the Worcester Chapter of the National Arthritis and Rheumatism Foundation (of which George is now president), and George cited the work of arthritic clinics as a means of bolstering our defense industries. He told the Rotarians that there are eight million sufferers from arthritis in the country, and from this group George is sure any shortage of skilled labor can be replaced. "We lose 800 million man-hours work from arthritis alone each year," he added, "and the contribution of current arthritis clinics could mean, through increased defense production, the difference between winning and losing a future war."

George repeated his belief that a war with Russia will be instigated by aggressive action in Korea, for he claims "there are two ways to bring a halt to the Korean conflict, win it or lose it, and I strongly advocate that we go and win, for we will not advance the date of a third world war one minute by anything we do in Korea."

Adding that Russia is careful and slow-planning, and will strike when ready, not before, George predicted a lightning end to any future war, "maybe within one week of the outbreak." According to his views, attack from Russia will be by air and guided missiles from submarines at America's heavily populated coastal cities, with New York as the prime target. "Stalin is a tough, ruthless man," he continued, "who will strike at the strength of our nation, which lies in the people. His first aim will be at mass annihilation instead of at our industrial centers, but if we can recover from the initial shock, we would eventually win any war. How much we could take, I don't know."

A need for better air defenses against night attack was also advised by our General George, who for three years, you'll remember, conducted the successful air war against the Japs during World War II. "We could probably meet successfully a daytime assault, but our night defenses are not in good shape," he concluded.

Early this year President Carl Ell, XI, of Northeastern University, Boston, announced that a new College of Education would be established in September. Carl said the new College of Education will offer a four-year program for undergraduates leading to the degree of Bachelor of Science in Education. Curricula will be planned especially to prepare prospective teachers for various areas of subject matter given in the secondary schools. Programs of study for teachers already in service and leading to the degree of master in education will be made available late afternoons, evenings, and Saturday mornings.

This new college is Northeastern's fourth day College. In 1909, while we were still at M.I.T., the College of Engineering was founded; in 1922, the College of Business Administration; and in 1935, the College of Liberal Arts.

A tragic note to the Christmas Day death of Otto Meisel, II, as reported in last month's class notes, came to light when his widow, Helene, acknowledged notes of sympathy from President Don Stevens and me. "Otto went off shopping with our big son on the 24th," she writes, "happily in anticipation of Christmas with Robert, home on leave from the Army. He felt ill when he returned and we had him only through the night, as he slept away from us at 10:00 o'clock on Christmas morning."

Cal Eldred, noting my SOS, re: a missing classmate, wrote: "N. Sidney Marston, VI, has moved from Dedham and is now living at 168 Lewis Avenue, Westbury, L.I., N.Y. Possibly Sidney will tell you of his teaching and business experience if you should ask him. I have found that he is not fond of writing letters." He isn't; I wrote three weeks ago — no reply.

Sara and I, at this mid-February writing, are spending a 10-day vacation in our beloved Cornish, Maine, with our daughter and son-in-law, Mr. and Mrs. Peter Barton, and their four youngsters and our daughter-in-law, Mrs. OBD, Jr., (the big feller being back in Naval Air active duty) and their two youngsters sharing our visit

Of course you are keeping track of 1911's customary good showing in the Alumni Fund campaign in the monthly news sections of The Review — right now is your last chance to make a 1952-1953 contribution, if you have not already done so. Meanwhile, make your plans to be at Snow Inn, Harwich Port on Cape Cod, June 19-20-21 — either for the entire period or for a day or two, anyway. See you there! — Orville B. Denison, *Secretary*, Chamber of Commerce, Gardner, Mass. John A. Herlihy, 588 Riverside Avenue, Medford 55, Mass.

• 1912 •

Fred W. Barker, President of the Syracuse Savings Bank was elected chairman of the board of the Savings Bank Life Insurance Fund which handles the guaranty funds for all life insurance policies issued by New York State savings banks. Congratulations, Fred! Jim Cook reports a very pleasant visit from Harold Brackett who spent the night in Swampscott on his return from a trip to Maine last fall. Harold reported excellent fishing at Camp Phoenix, Sourdnahunk, Maine. Harold is

handling the large wood lots on his ancestral home at Limerick, Maine, on a selective cutting basis as a step toward better conservation of our fast vanishing lumber supply.

Last year, Vincent L. Gallagher was made Deputy U.S. Manager of the Pearl Group of fire insurance companies. This is his most recent promotion which has been very rapid since he joined this group in 1953. Jerome C. Hunsaker now chairman of the National Advisory Committee for Aeronautics, is the author of one of the Terry Lectures at Yale and which consists of 116 pages, admirably readable and brilliantly illustrated, its title being "Aeronautics at Mid-Century." Jerry also spoke at the Eighth International Congress for Theoretical and Applied Mechanics at Istanbul, Turkey. His subject, "Social Aspects of Aeronautics," pointed out what human flight may do to human society in the immediate future.

Erwin H. Schell recently spoke at the annual dinner of the National Management Council, where he was presented with the Wallace Clark Award "for distinguished contribution to scientific management in the international field." Professor Schell has been for many years actively interested in the international aspects of scientific management, and in 1935 attended the Sixth International Management Congress in London. Since this time he has served as Chairman of the Program Committee for the United States Delegation at International Management Congresses in Stockholm, Brussels and, for the coming Congress, at Sao Paulo, Brazil. The following is a short quote from his speech. Speaking about the far-flung, flourishing exchange of ideas on better management between leaders of free countries of the world, Professor Schell urged expansion of this type of internation commerce, including exchange visits of industrialists from the various countries. "The vehicle for these tidal movements of administrative thought," he said, "has not been primarily the written word. Rather has it been word of mouth. During recent years, under the auspices of the Mutual Security Agency and the National Management Council, large numbers of industrialists from foreign countries have visited our shores, seen with their own eyes the day-to-day application of American managerial principles, and talked at first hand with the top management of our industries."

Ted Marceau writes that he is now located at 1828 B 20th Avenue, North St. Petersburg, Florida, and would be delighted to see any of you who are in Florida this winter. His reaction on seeing the faces in the class picture taken at Snow Inn is that something seems to have happened during the passing years, which is not too flattering for most of us. Ray Wilson reports that Colonel Harold Mabbott has retired to Swarthmore, Pa., where he is extremely active in local civic matters. He has practically rebuilt their home singlehanded and is now active in the Players Club, putting much time in building sets and also appearing before the footlights. He rates as an expert woodworker and model maker. Ray reports a miniature ferry boat with all details, complete with ferry slips, as being very interesting. Jesse Hakes has retired to an old country estate outside of Baltimore at Glenwood, where he and Mary entertained Ray and his wife overnight recently. Jesse has a large nursery which keeps him busy, and has now acquired an adjoining farm which he plans to operate as a dairy. Mary is an active Garden Clubber, traveling about the country on various projects. Mac Priest reports that he is still with U.S. Steel Corporation of Pittsburgh and was greatly disappointed in not being able to get to Snow Inn last spring. On a recent visit to Mac's old home in Littleton, Mass., he spent a pleasant evening with the John Pettingells, who are now living in West Acton.

Ray reports a pleasant visit with Fred Robinson when he was last in Boston. Fred is actively interested in civic work including several planning projects for traffic improvement conditions in or about Boston.

Harold Griffin reports that he is still going strong, although he has to slow up on the upgrades. His large family are now grown up and he is living alone in Norwalk, Conn. Harold boasts of nine grandchildren. Who can match that? Hugo Hanson is still the number one boy at the W. C. Hamilton Paper Company where he rates as president. Hugo and Edith live in Ardmore, Pa. His three children are all married and they report six grandchildren.

It is with much regret that we announce the death of Dr. John L. Bray on Dec. 7, 1952, at Lafayette, Ind. John came back to the Institute and took his doctor of science degree in 1930, after years of experience as a metallurgist in Central and South America and British Columbia. During this time he was professor of Metallurgy at Nova Scotia Technology College in Halifax, and also served as a metallurgist with the United States Tariff Commission. At his death he was professor of Metallurgy at Purdue University and head of the School of Chemical and Metallurgical Engineering.

Colonel Richard C. Stickney passed away suddenly on December 15, 1952, at his home in Stoneham, where he had resided since his retirement from the Army four years ago. Dick was a classmate at West Point with both President Dwight D. Eisenhower and General Omar N. Bradley, graduating in the class of 1915. Dick's oldest son, Lieutenant Richard C. Stickney, Jr., graduated from the U.S. Military Academy in 1943, was killed while piloting a *B*-2 in January, 1945, while returning from his seventh mission over Japan. During World War II, Dick saw service in Australia, Japan, and The Philippines. In 1946 and 1947 he was president of the War Crimes Trials in Manila. Later he was assigned to the Personnel Section in Washington, D.C., where he suffered a heart attack and after being hospitalized for several months, retired from the Army after 37 years of active service. — FREDERICK J. SHEPARD, JR., *Secretary,* 31 Chestnut Street, Boston 8, Mass. *Assistant Secretaries,* LESTER M. WHITE, 4520 Lewiston Road, Niagara Falls, N.Y. RAYMOND E. WILSON, 8 Ogden Avenue, Swarthmore, Pa.

• 1914 •

The long arm of time has reached out again and taken another of our classmates. Arthur L. Todt died in San Francisco on December 4. Todt came to Technology from Oswego, N.Y., where he prepared at the Oswego Normal High School. He was active in the Naval Architectural Society, of which he was president during his senior year. After graduation he remained for a year at the Institute as an assistant, but from then until the time of his death he was associated with the Standard Oil organization, the first six years as a marine architect building ships at Hong Kong, China, and the last 30 with Standard of California in connection with bulk plant supervision and marketing. He is survived by his wife, the former Viola Parsons.

The informal Midwinter Dinner of greater Boston Technology men took place at Walker Memorial on February 5. It was the usual very nice affair. Seven Fourteen men and two guests were at the 1914 table. They included: Louis Charm, who reported that both his son and his son-in-law are now M.I.T. graduates, his son-in-law being a professor; Ernest Crocker; Frank Dunn; Leicester Hamilton, who wanted to be entered in the grandfathers' contest as already having six grandchildren and hopes for more; Dana Mayo, who came down from Portsmouth, N.H.; Harold Wilkins; and your Secretary. Clarke Atwood called up the next day and said that after coming up from Martha's Vineyard he found that he had mixed up his dates. He and his wife have just adopted two children whose mother died and whom the Atwoods have known for some years.

There is an unsolvable mystery regarding Dean Fales. The first reports that came in were that he had sneezed so hard he had broken his nose. Subsequent reports coming from Dean himself confirm the broken nose but add two black eyes. He insisted, however, that this did not happen the night he went to the Firemen's Ball as president of the Kennebec Beach Chowder and Marching Club. In any event, it is safe to say that in trying to sneeze Dean struck something with rather disastrous results. He is much better now and is packing up for a month's trip to Florida.

Although retired, Bert Hadley manages to keep very busy. As the Class knows, he is chairman of the Board of Trustees of Middlebury College. His latest honor, however, is that of president of the Sporting Arms and Ammunition Manufacturers Institute as well as chairman of the affiliated Wildlife Management Institute. The former is easy to understand, because Bert has always been very active on committee work with that organization and in handling liaison problems between that Institute and the Government. He hastens, however, to inform your Secretary that he has not stepped out of character by being the chief of a wildlife organization since its work is mainly concerned with the conservation and propagation of American wildlife. Between trying to get to the bottom of the Dean Fales situation and preserve the high reputa-

tion of Hadley, your Secretary finds himself a bit confused.

Two of your class officers have had medical upsets. Charlie Fiske has had difficulty with his back, which has made it necessary to have stretching procedures to relieve nerve pressure on his spinal disks. Mrs. Fiske has also had a recent hospital experience. Both are improved and are now looking forward to a late spring European trip. Ross Dickson has had two recent hospital experiences, but he, too, is much improved.

Alden Waitt writes from San Antonio that he finds his retirement there anything but dull, although he does miss his northern contacts. From his letter it is obvious that he is most actively engaged in chemical engineering consulting, being retained by several groups. Your Secretary suspects that what Alden really wanted to report was the arrival of a fifth grandchild, a girl, to his daughter, who is the wife of Major John White of the Medical Corps. Alden's son and family are back in this country and stationed at Fort Benning, where he is a captain of the Infantry. — H. B. Richmond, *Secretary*, 275 Massachusetts Avenue, Cambridge 39, Mass. Ross H. Dickson, *Assisant Secretary*, 126 Morristown Road, Elizabeth, N.J.

• 1915 •

Nice going, classmates, on the Alumni Fund. Max makes a fine report of our December 31, 1952 standing: Contributors this year are 99 against 63 last year — an increase of 157 per cent. In the 1910-1919 class group we are second to 1917 with 121 contributors this year, and second to 1916 with 159 per cent increase. Amount contributed is $2,677.00 this year against $1,455.00 least year — an increase of 184 per cent. Comparatively, again, we are second to 1916 with $3,001.00 and third to 1918 with 210 per cent. Keep up your good work and help Max get us right up on top of that standing. Old time baseball fan (unfortunately, he has rooted for the Red Sox) that Max is, he has stuck in there with his club (1915) behind in the score until he could knock in those winning runs and pull the game out for our Class. Help him to score a flock of runs ($ $) more!

On January 10 Frank and Mary Scully invited Boston classmates for cocktails at their home in Belmont. Of the more than 40 who accepted enthusiastically, more than 25 braved the worst snow and ice storm of our winter here to reach Frank's house. Mary, such a gracious hostess, aided by her sons, Frank, Jr., and Peter, and Frank's sisters, Genevieve and Florence, welcomed us all and helped us to enjoy a gay afternoon, enlivened with Frank at the piano accompanying the tuneful though loud rendition of some old Tech show numbers and our M.I.T. songs. Surely a warm and friendly get-together, and most generous on the part of all the Scullys.

My apologies and regrets for not having given you Hank Marion's splendid letter written in May, 1952, but it is just as interesting now: "I have been on the West Coast all the month of April and I am sorry that it was not until I returned that I found your notice of the class dinner. Virginia and I had a wonderful trip — most of which was business — but we did manage to get in a little fun on the side. We left New York April 1 on the *Twentieth Century* to Chicago and then on the Great Northern *Empire Builder* to Seattle. We were there a few days and then motored to Portland, stopping at Mount Rainier. Then after a few days at Portland we motored down by way of the Oregon coast, stopping off a few days at Grant's Pass where we tried a little salmon fishing on the Rogue River. Unfortunately, it was a little too early for salmon, in view of the fact that the river was very high from melting snow and running very fast. However, I did hook on to a couple of steel heads, . . . but being the wrong season and having to throw them back in again, the only thrill I got was in landing them, even if it was with a heavy salmon rod. We then motored down through the Redwood Highway to San Francisco and then went over for a couple of days to the Ahwahnee at Yosemite. From there we went down to Los Angeles, where we stayed at the Huntington in Pasadena, which is right near Gene's and Ruth's place. We, of course, visited them in their new home, and they also had dinner with us at the Huntington. We flew up from Los Angeles to San Francisco and took the *California Zephyr* up through Feather Valley to Salt Lake City and Denver and had planned to stop in Denver for several days, but I had to fly to Washington for an Advisory Committee meeting, so Virginia came home on the train a few days later on our reservation. Give my regards to all the boys in Boston, and here's hoping I will see you all soon."

These letters from Larry Landers and Jim Tobey are typical of many that classmates took the time and interest to write to Mary and Frank. From Larry: "I received your very nice invitation to attend your cocktail party at your home on Saturday, January 10. Unfortunately, we have already made plans to go to a wedding anniversary on the same day in New York, so will be unable to come to your affair. I want you to know that both Fanny and I will miss your genial company very much, because we both consider an afternoon spent with M.I.T. 1915 men something that is really worthwhile. Please accept for yourself and your family our best wishes for a healthful, prosperous and happy New year."

From Jim: "Colonel Tobey and his Ladv greatly regret that it will not be possible for them to attend the cocktail imbibing at the Frank Scully's on January 10. They know that all the M.I.T. waifs will enjoy themselves and trust that the very best regards of the Tobeys may be conveyed to them, preferably before one Azel Mack begins to burst into the strains of 'Sweet Adeline,' a song said to be popular in Boston. And a prosperous New Year to all."

Although, in his letter to Frank, Loring Havward rewrote "fellows," because he said it looked almost like "felons" but is not so intended.

Ed Sullivan and his sister Anne are on the *Mauretania* for a Caribbean cruise to dodge this spell of rugged New England winter. Bill Campbell has opened an office as a General Consultant in the Woolworth Building in New York City. All our best to Bill for success and happiness in his new business. A swell fellow with years of varied and valuable experience, he is well qualified to give business help and advice.

Not content with being retired from the presidency of Hodgman Rubber Company, Framingham, Mass. (where Weare Howlett is sales manager), Max Woythaler is now a director of the Regional Federal Renegotiation Board at 140 Federal Street, Boston. This is under the authority of the President. Max must just like to work.

Christmas cards from classmates all over the country warmed our hearts with fine feelings for all these old friends. Some unusual ones: Phil Alger's bit of original poetry; a pretty card from the Carl Dunn's in Chicago; a touch of the West Coast from the Hen Bergs in San Francisco; Loring Hayward's homecoming welcome to his two sons and their families, including a new grandson; the globe trotting Ken Kings are off again to Europe with a card decorated with a travel map giving their itinerary from January 30 to their return June 5; and Jack (Marshall) Dalton's comforting Christmas message, "Greetings and appreciation for the superb job you do and have done for so many years to keep our Class together and its spirit strong." Many thanks to you all!

Sam Eisenberg is optimistic and cheerful about our 50th: "I have just read President Conant's short history of M.I.T., and a strange thing struck me. The Institute received its charter in 1861 but it really opened its doors as the Massachusetts Institute of Technology in 1865. If the centennial of M.I.T. is in 1965, it happens to hit the 50th anniversary of our Class. I plan to see you and the rest of the boys there in 1965." I hope we all gather together.

Good old Dennie, II, always helping, writes: "My wife and I went to New York Wednesday for this year's Annual Stein Award Dinner of the M.I.T. Club of New York. This year's recipient was my longtime friend and contemporary, State Senator Thomas C. Desmond'09 — so the committee wanted me to lead the songs and cheers and present a specialty, "The Tech Show Story," in which I included a parody on 'Mr. Dooley' featuring 'Mr. Desmond.' The party was at the Waldorf. Jim Killian was principal speaker, and it was a fine event. My wife and I met a number of our classmates and their wives, such as Frank Scully and Mary, and Jerry Coldwell, also a former Framingham townie and his wife, Ken Boynton and Max Woythaler — all 1915 — (help Azel for class notes, eh?) Well, best regards to you and your wife, and I hope you are both on top in the health league."

The sympathy of our Class goes to Jerry Coldwell for the sad loss of his wife, Charlotte, who died suddenly in the Lawrence Hospital, Bronxville, N.Y., on January 9. Mrs. Coldwell suffered a heart attack on Friday and passed away shortly after having been admitted to the hospital from her home at 8 Brooklands. A native of New York City, Mrs. Coldwell was a

registered nurse and was graduated from Hahnemann Hospital formerly on Park Avenue in New York which was later merged with Flower and Fifth Avenue Hospitals, also in New York. Mrs. Coldwell became a resident of Bronxville in 1937, and prior to World War II, was active in volunteer nursing in special clinics at Bellevue Hospital in New York. She taught home nursing for the Bronxville Red Cross at Sarah Lawrence College and at Bronxville High School, and was engaged in the library service of the Red Cross and in volunteer nursing at Lawrence Hospital. Since World War II she had been an officer of the Hospital Bargain Box of Lawrence Hospital. Throughout her residence in Bronxville she had been active in the charity work of the Reformed Church. Surviving, besides Jerry, are two sons, Charles William and Robert Sharples Coldwell; a sister, Miss Ruth Bates, and three brothers, Seeley, Floyd and Clayton Bates. As a bit of cheer for Jerry, the Class sent flowers to his home later, and Jerry wrote: "Thanks for the flowers and the thoughts back of them. They came yesterday and I put them in a vase, not that I am an expert in flower arrangements, but at least I don't put two colors together which clash. Please thank our classmates as you see them. I'm still putting the pieces together but guess I will be doing that for some time. However, we are pretty busy at the office and that helps."

From Sand Springs Ranch, Wendell, Idaho, Sam Berke writes: "I am spending a few weeks here with my brother, and I certainly needed the vacation. I am just about catching up with myself. We haven't had much luck getting together so I will try to make it soon, as I enjoy visiting with you, so don't be surprised to hear from me the next time I get up to Boston."

From the University Club, Akron 4, Ohio, Parry Keller writes: "The November issue of The Review was particularly interesting. . . . A good job well done, Azel. I will try to help you more than I have in the past. I spent the remaining two weeks of my vacation in the Finger Lakes region of Central New York State during October. I set up headquarters at the Canandaigua Hotel and made daily exploratory trips into the lake country from there. I think that part of New York is beautiful any season of the year. . . . The situation was made to order for color photography, and I took full advantage of the opportunity with quite satisfactory results. One of my trips was to the Corning Glass Center in Corning. Not only did I find the display of glass products, the museum and the making of Steuben Glass pieces very interesting and well worth one's time, but I enjoyed a nice visit and lunch with our classmate, Otto Hilbert. Ray Stringfield was a visitor in Akron recently and came out to Goodyear to see some of his old friends. I had not seen him for over 20 years. He is president of the Fullerton Manufacturing Company, Fullerton, Calif. My little granddaughter is growing up fast. She will be nine months old on December 17. We have a fine time together. Give my best regards to Fran."

Shortly after writing this cheerful letter to Frank, Howard M. Sawyer died on January 13 while on the same western trip he mentioned in his letter: "Mrs. Sawyer and I very much appreciate the invitation of your good wife and yourself to come to a cocktail party at your home in Belmont on Saturday, January 10. We would love to do this if it were not for the fact that we are starting on an extended trip on January 8 to the West Coast, so will be quite a good many miles away from here on the 10th. I recently was looking over a list of our M.I.T. Class that Azel Mack sent with the notice of the last class dinner. I am ashamed to say that you and Max Woythaler were the only two on the entire list I currently knew. Some day I will surprise you and Max by attending a class function provided both of you will take me in hand and help me out in renewing acquaintances of many years ago."

It is sad to record these additional passings from our Class: Earl E. Detrich died December 8, 1952, in Huron, Ohio. For many years he had been associated with the *Daily Legal News* there. L. Fisher Silversmith died December 18, 1952, in Hartford, Conn., where he was widely known in the construction business as owner of L. F. Silversmith Company, Inc. Our sympathies go to the families of these departed classmates. — AZEL W. MACK, *Secretary,* 40 St. Paul Street, Brookline 46, Mass.

• 1916 •

They say that April showers bring May flowers. Well, we're hoping that the April showers will bring us many letters from you with material for our column.

The old mail satchel is up near the top again, so we'll start right in on it. We had a nice letter from Will Wylde from which we quote in part: "As far as news of myself is concerned, well nothing of importance seems to happen, which on the whole leaves me perfectly contented. I can say that our company is expanding into Canada and building a mill in Quebec City to manufacture the same kind of paper as we manufacture here. I shall not be active in its affairs, but I have been to Canada a few times in connection with it and, on one of my trips last spring, I saw Jimmie Merritt in Montreal. We had a full evening's visit together and it was very enjoyable. Jimmie has been in Canada ever since he graduated and, for many years now, associated with the Dominion Brass Company with its headquarters in Montreal."

Jack Burbank sends us these interesting particulars about his family: "Most of the class notes seem to include some items about the children of 1916 graduates, so perhaps a word about mine may be in order. In the order of age, my daughter, Marian, is living in a suburb of Boston. Her husband is a member of The Travelers Insurance Company salaried field staff. They have three children. My son, James C., is with the Electric Boat Company at Groton, Conn., and lives at Stonington. They have one child. My other son, John F., is living in Minneapolis, Minn., and is a salaried field representative of the Automobile Insurance Company, an affiliate of the Aetna Life Insurance Company of Hartford. They have a daughter. Four of the five grandchildren and four of the six parents were with us for Christmas."

Earl Townsend sent this nice note: "We were able to get all the family together with us this Xmas for the first time in five years which made the holiday most merry. My daughter, Frances, accompanied by spouse and children, Sandra, 10 years and Pamela, five years, motored up from Little Rock, Ark., and my son, David, came on from Martha's Vineyard with wife and daughters, Deborah, four years, and Patricia, two years. The other daughters, Eunice and Barbara (born 1916) were on hand, so we had a full roll call of four children and four grandchildren."

We had a letter from Wes Blank telling us that he is "slowing down and taking easy consulting work and special secret technical assignments with the government. When in Washington be sure to give me a ring." We had a nice letter from Phil Baker in which he enclosed a group picture taken of his family early in December. Phil looked wonderful. He writes of one of his interesting pastimes as follows: "Occasionally I hunt on Salce Island in Lake Erie where protected, fed and encouraged with corn and soy beans they (pheasants) fly up like grasshoppers. One thousand men each take 11 birds home after two open days, and another 1,000 hunters do the same a week later. I believe it is temporarily cut to eight now." Dick Berger sent us a couple of pictures with his recent letter. One of the pictures shows him again impersonating Harry Truman, and with him in the picture are Jackie Gleason, TV comic, and Jackie's two daughters. The other picture is of a hefty, happy Santa Claus who is in reality none other than our own Dick. He writes: "Recently I was the Santa Claus at the turning on of the Christmas lights for East Bridgeport (Conn.) Business and Professional Men's Association, and I enclose snapshot of myself as proof. Some of my friends claim I am 'Santa' most of the time. Am completing more cancer prevention literature which should be the best ever. Perhaps you have noticed how my views regarding excessive tobacco smoking are now being vindicated and substantiated by medical authorities both here and abroad." Keep up the good work, Dick.

We had another note from Chuck Loomis on the Fifty-Year Gift Fund, and he is looking forward to seeing more of us getting into the act. Howard Green recently sent us a short note telling us that everything with him is fine and also enclosed the following clipping: "Formal announcement of the election of Howard Whipple Green as a fellow of the American Statistical Association was made last night (December 28) in Chicago where the association is holding its convention. Of the association's 5,000 members only 175 have been elected fellows. . . . Green was chosen because of his pioneer work in the study of population movements. As director of the Real Property Inventory, which he helped found in 1932, he began a close study of the changes in land use and population changes, based on census

tracts, in small geographical areas set up within the city. Since that time, largely at his urging, the Bureau of the Census has adopted census tracts for more than 80 cities. . . . He was vice-president of the American Statistical Association in 1940 and has been chairman of its committee on census enumeration since 1931."

Bill Dodge writes from Asheville, N.C., where his architectural business has long been established: "I am so far away with so little excuse to get North that recommendations on class reunions are practically out of my line, and I am afraid I have no ideas of any value. As far as class news goes, I am still practicing architecture with nothing particularly exciting to report. I am doing a certain amount of school work which is a pleasant enough form of practice. I am, strangely, the president of the Engineers' Club of Western North Carolina, and we have over 225 active members. This is pretty good for this neck-of-the-woods, and the interest is really quite keen. We meet once a month and very often have illustrated talks. . . . My son got his commission in the Corps of Engineers in September, was married a week later, and is here on leave, reporting to Seattle, February 9, to go to Korea as a combat engineer. Frankly, I do not like it because the whole situation seems phoney to me, and our prosperity for some time past has been based on sacrificing a limited percentage of our young men in active warfare. My daughter, and her husband and daughter are in Carlisle, Pa., but have hopes they may come back here to live."

Your Assistant Secretary sees Coke Flannagan almost daily as a neighbor in Mountain Lakes, as a ferry-boat commuter to New York in foggy and clear weather, and occasionally as a co-worker on telephone problems. Prodded for news, Coke has the following to add to the column: "Presently engaged in contractual negotiations covering the activities undertaken by Bell Telephone Laboratories, Inc., in connection with military communications problems and equipments. I have been with the Bell System for 30 years. Have one son, John C. Flannagan, 21 years old, now a senior at Virginia Military Institute, majoring in physics. I can look up to him both as a student and because he is six inches taller than I am."

And did you all read the most interesting article on the history of bacteriology at M.I.T. by Murray Horwood in the January issue of The Review? Your Secretary had the pleasure of a telephone conversation with Tom Jewett recently, and Tom is as fine as ever. We have a couple of address changes: Richard Fellows, General Cable Corporation, 6223 Hollis Street, Emeryville, Calif.; George Sutherland, Park Road, Woodbury, Conn. We regret to report the passing of Eddie Ekdahl. Ed died from a heart attack late in January shortly after returning from his trip to Venezuela. We also are sorry to report the death of Ed Hale who passed away early in February of this year. We are going to miss these fellows.

Jack Burbank gives your Secretaries a helping hand with this note and clipping about Charlie McCarthy. "For your information, as a neighbor of Mack here in Hartford, we visit back and forth two or three times a year at dinner, but he is extremely hard to reach because his work is largely that of contact between the various departments of United Aircraft and primarily Navy Department officials in Washington, D.C." The clipping reads: "As a vice-president of United Aircraft Corporation and the corporation's senior engineering specialist, Charles J. McCarthy has a job with a paradoxical twist. Not only is he a member of UAC's top operations and policy committee but he also serves on the individual operations and policy committees of the company's Sikorsky and Chance Vought divisions. As a result he is interested not only in the development of aviation's relative slowpoke, the helicopter, but is also up-to-date on such things as transonic jets and supersonic guided missiles. Sikorsky builds helicopters while Chance Vought produces jets and is also working on the government's secret guided missiles project. Powered flight has been around for only a half-century and for 36 years out of the 50 McCarthy has been around aviation. He joined the Navy following graduation from M.I.T. in 1916 and was assigned to the aviation section, Bureau of Construction and Repair. In those days the Navy didn't have a Bureau of Aeronautics. Working on the design and structural requirements of naval aircraft, he became an expert in structural design. He quit the Navy in 1926 and joined the growing young airplane company headed by Chance Vought, then located in Long Island City. He worked on the original Corsair, the *O-2U1*, the first airplane to be designed around Pratt and Whitney's Wasp engine. The Navy will shortly accept delivery of the last Corsair fighter, making the end of a 15-year production span for the airplane—the longest of any military aircraft in history. . . . When Chance Vought became affiliated with UAC and became known as Vought-Sikorsky, he rose to chief engineer and then to general manager. Mr. McCarthy recently was named president of the Institute of the Aeronautical Sciences, aviation's top engineering society. The purpose of the Institute is to facilitate the interchange of technical ideas among aeronautical engineers in this country and abroad. Its meetings, local and national, provide an open forum for the testing and evaluation of new ideas. . . . Mr. McCarthy was general manager of Sikorsky at the time the first helicopter, the *VS-300*, was built. Ever since then he has been an enthusiastic advocate of the strange looking craft. 'It has established itself,' he says. 'When a good twin-engine helicopter becomes commercially available and is able to carry 25 to 40 passengers, there ought to be a suburban market for it. I was talking with the chief engineer of one of the airlines the other day and he thinks it will eventually replace interurban busses.' Despite his many aviation responsibilities, Mr. McCarthy has been the busy man who has always found time to do a job for Hartford, whenever the community has called upon him. In 1947, he headed the Community Chest drive in Greater Hartford and is a director of the local Red Cross." Our congratulations to Charlie on his election to the presidency of the Institute of the Aeronautical Sciences for the year 1953.

Still on the subject of aviation, Maurice Holland with the assistance of Thomas M. Smith has recently written and had published his latest book entitled *Architects of Aviation*. We quote in part from the inside flap of the cover jacket this summary of the book: "The story of American aviation, like any good story, has its unknown heroes. What the Wrights, Glenn Curtiss, Lindbergh, Arnold, and Byrd accomplished are deeds known to all. But no less exciting and certainly no less important has been the work of men of whom the general public may never have heard. The designer of the first wind tunnel, the pioneer of aerial photography, the man who made night flying possible, the genius who developed the science of aeronautics—these and others were the architects of that tremendous, globe-encircling, efficient machine we take for granted today: America's air power. As a Signal Corps officer during the great period of 1917-1920 at Taliaferro, Wright, and McCook Fields, Maurice Holland participated in the experiments and knew the men who opened up the advance of flight. In this book he has gathered together 12 biographies of those pioneers — biographies which are fresh and new, which contain essential material for the aviation enthusiast, and which, as here woven together, tell the fabulous, adventurous tale of America's rise to supremacy of the air." The preface to the book was written by Jimmy Doolittle'24. This seems like a good opportunity to point out that Jack Camp and Izzy Richmond possess private pilot licenses and are still doing some flying.

That's it for this month. Keep the letters coming. There are still some of you that haven't sent in your views on reunions. We'd like to hear from you. — RALPH A. FLETCHER, *Secretary*, Post Office Box 71, West Chelmsford, Mass. HAROLD F. DODGE, *Assistant Secretary*, Bell Telephone Laboratories, Inc., 463 West Street, New York, N.Y.

• 1917 •

On September 12 of last year, our genial Class Secretary, bestirring himself after a "nice, cool" New England summer, wrote me (W. I. McNeill) as follows: "With the first issue of the class notes for the 1952-1953 season at hand, I am reminded that perhaps you would be willing to take over preparation of the April issue."

Since "the guy" is irresistible, here I am on Lincoln's birthday afternoon doing a minor editing job on some notes that the 1917 men around New York were good enough to contribute. (Permit me right here to thank each one for responding to the call for items for this April issue.) I know that you will be as interested as I was to read the following notes:

Enos Curtin: "I am sure that other members of the Class have much more interesting goings on to report; however, for whatever they may be worth and to help out if you run out of wordage, here goes: I retired from public life and back

to the quiet of Wall Street last December, but found myself in Italy, Switzerland, France, and Germany, on a special consulting job for the Defense Production Administration during January and February. Since that time I have been in Wall Street, except for a delightful sail to Cape Breton Island, Nova Scotia, in the month of August. In April I was elected to the Board and the Executive Committee of American and Foreign Power at which I spend some little time and find the work most interesting. I have also recently been elected to the Board of the New York Association for the Blind, 'The Lighthouse,' and the St. Barnabas Hospital, a large heavily endowed institution for incurable diseases. I find my activities in these jobs most satisfying."

Homer C. Ling: "A revolutionary method in staking power transformers, brought about by my recent invention of a progressive die mechanism operating in conjunction with a pressure regulated power press, boosts production 700 per cent over that by the conventional method and won for me the position as development engineer with the Empire Coil Company, Inc., of Westchester County, New York. I am now working on a 6PDT hermetically sealed relay for the U.S. Air Force. This project has found many contestants. I am looking forward to a 1917 man to win the race.

"Mrs. Ling and I are now proud grandparents for the first time. Our second son, George, now completing his doctorate in engineering at the University of Iowa, married Gloria Kwan, niece of S. S. Kwan'19, Course IV. The cute granddaughter arrived last September."

W. Joseph Littlefield: "I have been working for the past seven years in Johns-Manville Corporation on development of techniques and methods of appraising the operations of our company, proposed capital expenditures, opportunities for growth and development, trends in elements of costs and means of offsetting inflationary rises in some of them, and many other interesting factors. At the same time we have been developing a group of specialists in this work of analysis and appraisal to provide very much needed help to all stages of management, not only in the headquarters of operating divisions but also at plants and mines. The work is fascinating and my title of Comptroller for Financial Analysis is as intriguing as the duty.

"I was married last March after several years of being a widower; an action highly recommended to others similarly situated."

Richard O. Loengard: "I have just returned from a trip to Detroit where, as you doubtless know, our main laboratories in the plating field are located, and find your letter of the 21st on my desk.

"I also find the December issue of The Review and our class notes in which Johnny DeBell and Ras Senter seem to be conspiring for a shift of headquarters, offering as an inducement something which seems to be highly questionable, namely, the consumption of large quantities of plasticizers. I can only gather from this that Johnny DeBell won a signal victory over Ras in proposing that members of the Class be well plasticized, rather than well oiled, at the next reunion. I immediately communicated with our Organic Coatings Laboratory to be educated in my choice of plasticizers, and I am informed by them that most pthalates are toxic, and the choice of non-toxic plasticizers is more or less limited to bean products such as castor oil. I wish immediately to register a strong protest against having our 40th Reunion at any spot where such strange habits prevail.

"I have not too much to report. We bought a house in Sasqua Hills, East Norwalk, a little over a year ago, which has worked out extremely well. We live there in the summer and on week ends during the rest of the year, and with two sons at Harvard and a daughter, Wellesley'51, now at Yale, it is a very convenient rallying point."

Howard L. Melvin: "My present position is chief consulting engineer for Ebasco Services Incorporated, Two Rector Street, New York City. In this capacity, planning new distribution, transmission and power production facilities and the operation of power pools for meeting the ever-increasing demands upon the electric utility industry is my specialty. Utility engineering work has been quite extensive as indicated by my Company currently doing the planning, followed by the design and construction, of about 20 per cent of the new capacity for the investor-financed utility companies operating in about 25 states in the United States. In addition, similar work is being done in several foreign countries, including management of the building and placing in operation of a modern electric power system in Greece.

"As a westerner, I enjoy golf, fishing, the outdoors and travel with my stereo-realist camera. My home is in Upper Montclair, N.J.

"There are three married children in the family, a son who was less than a year old when I was in M.I.T. and now living in California, another son living in New Jersey, and a daughter living in Seattle."

David E. Pierce: "I am still with General Aniline and Film Corporation, but plan to go into full-time consulting work next summer. I am now doing some part-time consulting in connection with a system for cost control of maintenance which I have developed.

"The second edition of my book, *Chemical Engineering for Production Supervision,* was published in 1950 by McGraw-Hill. I am editor of a monthly column on 'Equipment and Design' in *Industrial and Engineering Chemistry.* Recently I gave a talk for American Institute of Chemical Engineers on 'How to Control Costs by Kilowatts.' This was published in the January, 1953, issue of *Chemical Engineering.*

"My children are both married so Friend Wife and I spend the weekdays in New York and go home to Elkins Park, Pa., on week ends. We are both interested in color photography and in making oil paintings from subjects which we have photographed."

Charles D. Proctor: "It seems that you have already included notes of my 1952 vacation cruise to Ecuador, so all I can report of interest is our 1953 freighter cruise which begins February 6 on the S.S. *Santa Monica* of the Grace Lines. We are traveling with the same party of six that we were with last year. Our trip will be a 17-day one out of New York this time. I wonder if Tubby will be aboard! We make the ports of Venezuela and Colombia this time."

Kenneth C. Richmond: "I have the letter of January 21 that you sent to the members of the 1917 Class, which asks for notes for the April issue of The Technology Review. I have nothing of interest to say for myself. All four of my children are married. I have three grandchildren – plus prospects. My health is good. I am getting old, and on January 2 I completed 25 years with my present employer."

Now for myself. Last year at this time, Mrs. Mac and I were planning a vacation trip to Europe. We started out on June 15 from Idlewild on a flight to Paris (Mrs. Mac's first trip in a plane). We stopped at Goose Bay, Labrador, for refueling and then went non-stop to Paris. About a week of sightseeing in Paris, including one night at the marvelous Paris opera and, just to preserve balance, the following night at the Folies (second seat from the front, ahem!) wound up the Paris end of the trip.

The next leg of the journey was a flight from Paris to Zurich, Switzerland. A few days in Switzerland, visiting the sights of Zurich, Bern and Lucerne, plus a trip around the lake, just about accounted for our time in Switzerland. We left Zurich for Copenhagen by plane and spent about three days in and around Denmark. Mrs. Mac's parents came from the southern part of Sweden, hence we traveled by automobile from Copenhagen up through the central part of Sweden to the lake section and then across to Stockholm, stopping overnight in Sweden at the very old town of Granna. Trips to the Drottingham Palace and around the canals of Stockholm accounted for a couple of days.

We then flew from Stockholm to the city of Visby on the island of Gotland in the Baltic Sea and back the same day. From Sweden we traveled by train to Oslo, Norway, and then into the fjord country, including stops at Flam, Balestrand, Stalheim and Bergen, Norway. The boat trip from Bergen to New Castle, England, across the North Sea, was uneventful. A couple of days in Edinburgh, Scotland, and the highlands, and two days in London just about wound up our trip. In London I tried to run down Lobby but found that he had just left for a week end in the country. The trip across the Atlantic was uneventful, the highlight being a dinner at Shannon, Ireland, where the menu wound up with coffee with a "wisp of mountain dew."

A month of delightful, cool weather in Europe was a terrific contrast with the 80 degrees of temperature that we ran into at Idlewild on Sunday, July 14, at 6 A.M. This summer we are settling down to a cottage at Avalon, N.J., to get better acquainted with two grandchildren.

This February witnessed the end of my

10th year with General Aniline; still waiting for Congress or the Supreme Court to allow somebody with a pocketful or millions to take us off the government's hands.

When "you-all" get to New York, why not look up one or more of us for lunch? Hope to see many of you in June. Winfield I. McNeill, Special Correspondent, 230 Park Avenue, N.Y.

To the above deluge of news of the New York front, I would like to add a note about the annual Midwinter Dinner, preceded once again by a meeting of the 1917 contingent. This preprandial gathering was in the Sky Room at 100 Memorial Drive in the new apartment house built by New England Mutual Life Insurance Company on M.I.T. land. Once again, Win Swain brought some of his marvelous three-dimensional photographs. The meeting place, the refreshments, the chatter were all delightful. Present were: Dick Fay, Irving B. Crosby, Win Swain, Stuart Gurney, Jim Flaherty, Henry Strout, Ray Stevens, Joe Gargan, Jack Wood, Hal Chisholm, Gerry Thomson, Elmer Joslin, Rudy Beaver, Stan Dunning, Ed Hutchinson, Art Gilmour, Ted Bernard, Harry Sandell, Bill Colleary, Clarence Holt, Art Dickson and Ed Tuttle.

You will note included Irving B. Crosby, who had only recently returned from his tour to the Congo, and Bill Colleary, who designs two churches a year, beautifying the New England countryside, and then takes plenty of time for living a full and enjoyable life. The others may have had less intriguing, but nevertheless interesting, exchange of comment on their current activities.

Henry Strout was good enough to send in the following word on the passing of Bill Dean late in January:

"He was in the investment business on his own for many years at Johnstown, N.Y. During the war Bill Coburn of the Class of '11, who has an investment counsel business here in Boston, induced Bill to come down and be with him. Towards the end of the War, arrangements were made for Bill to put in full time with Bill Coburn. He lost his wife, as I recall it, back in 1947, and a few years later married a childhood friend, who was the widow of one of his childhood friends, Marguerite Hackney. They have been living at Longwood Towers for some years and spending vacations, holidays, and so on, at their home in Johnstown, N.Y.

"On January 8 Bill was sent home by the doctor and put to bed for complete rest. I talked to Mrs. Dean about two weeks later, and she said he was progressing very satisfactorily, and the doctor had indicated that he could probably start getting up in the near future. However, he evidently had a relapse as he passed away on January 28. He was buried in Johnstown, N.Y., on January 31."

We also regret to announce the passing of Henry Miller on Saturday, December 27, in New York.

Colonel Walter L. Medding, who since 1949 has been a member of the Engineer Section, General Headquarters, Far East Command in Tokyo, Japan, was recently assigned as assistant chief of staff G-2 and G-3 at the Army Engineering Center, Ft. Belvoir, Va.

By way of Chick Kane'24, we hear that Sam Chamberlain'18 has a splendid library at his studio in Marblehead with one great omission – he has no copies of the '17 Tech Show score, in which are some of his own compositions. If one of these scores is gathering dust in your attic, here's a chance for a real act of charity. Whether or not Sam would reciprocate with one of his famous etchings, we are not authorized to say – that is a matter for exchange of courtesies between the owner and the artist.—RAYMOND STEVENS, *Secretary,* 30 Memorial Drive, Cambridge 42, Mass. FREDERICK BERNARD, *Assistant Secretary,* 24 Federal Street, Boston 10, Mass.

• 1918 •

Present at the Midwinter Meeting of the Alumni were Ray Miller, Erving Betts, Charles Watt, Fred Philbrook, Grenny Hancock, Les Connor, J. Howe, Max Seltzer, John Clarkson, John Kilduff, Harry Camp, Ralph Whitcomb, and Royal B. Wills, who was chairman of the occasion and apparently ran quite a show. See page 212 of the February issue of The Review for further details. Now for some random statistics of another kind. Roy L. Johnson of the National Life of Vermont may hold some sort of class record, being seven times a grandfather. In answer to Magoun's request for some personal facts for compilation in connection with our Thirty-fifth Reunion now imminent, Henry Pinkerton replies amid a fine flourish of horns, "Significant data concerning me may be found in *American Men of Science, Who's Who in America,* or other similar publications." To the reference library, men! Bill Wyer says, "I am very glad to give you the following: present occupation: partner in William Wyer and Company, transportation consultants, and trustee of the Long Island Railroad Company; two children; four grandchildren; Republican; hobbies: bridge, horse racing, philately, and tennis." Incidentally, you'll also find Bill in the aforementioned reference volumes. William M. B. Lord lives in Valley Falls, Kansas, and so will probably not be at reunion even though he is now on the retired ist. He has one child and so far no grandchildren. Politically, he says he is "Republican, of course!" John Abrams of the Los Angeles area, roughed it smoothly in the hinterlands of Idaho. He has been active in oil and gasoline development, raised three children, enjoys one grandchild so far, is president of the Miniteers Association, the objective of which is better local and national government. With a fine, clear heartbeat and arteries saturated with red corpuscles, he declares with a joy the birds show every sunrise, "I'm too young to retire and too good a man to vegetate before I'm 88." Hobbies: shopcraft, horticulture, photography, trout fishing, mountaineering.

On page 47 of the January 19, 1953, issue of *Time* is a jolly advertisement of the United States Lines. In the lower left-hand corner will be found a photograph of both delicacy and force showing Mr. and Mrs. Marvin Pierce in one of the ship's saloons. Marvin, hands folded, cuffs stiff, black tie at exactly the right angle, and smooth pate demonstrating anew the laws by which light is reflected, says, as quoted below the photograph, "Congratulations on a ship and staff that make a crossing as pleasurable as a cruise." Instead of going east, Mr. and Mrs. Yale Evelev have gone south. From Mexico City he writes, "May I report as your class representative at this year's Fiesta of the M.I.T. Club of Mexico. The M.I.T. Club here has made us very comfortable. They assigned a local member, a Mr. George Camp'16, as our sponsor who met us at the airport, rushed us through customs and sees that we are made at home at all the Fiesta functions. Dr. Killian and Lobdell are both here for the occasion, which is evidently a red letter week for everyone in Mexico that had any connection with M.I.T. At the University Club our host was looking around the Club premises for other M.I.T. men for us to meet, but no one seemed to be around. Finally an elderly gentleman happened to come in and approached our table. Mr. Camp introduced us by saying that I might remember this gentleman, Professor Marks. For a while it did not ring any bell. Suddenly I exclaimed, 'You are not Lionell S. Marks, our thermodynamics nemesis?' The answer was 'none other.' You can imagine the reminiscences that followed. I do not know how you remember him—but I regarded him as a man pretty well along in years when he taught us the course 36 years ago. It was a wonderful reunion." – GRETCHEN A. PALMER, *Secretary,* The Thomas School, The Wilson Road, Rowayton, Conn.

• 1919 •

Art Blake reports that he was the only member of the Class to attend the Alumni Association meeting at M.I.T. on February 5, and asks, "What happened to all the usual gang?" He sent us a prospectus of the "Easter Bunny" he is getting out for the toy trade at Blake Industries, Inc., 120 Tremont Street, Boston. We hope to see Art when he comes to New York for the Toy Fair, in March.

Charles Chayne, General Motors Vice-president in charge of engineering, spoke at the General Motors Motorama of 1953 in New York.

Our sympathy is extended to the family of Gilbert Beers, who passed away January 15. For more than 30 years he had been in the construction business in Atlanta, Ga., and was owner of the Gilbert Beers Construction Company. He was a member of St. Luke's Episcopal Church, the Piedmont Driving Club, and was on the Board of Governors of the Atlanta Yacht Club. His wife and three daughters survive.

Fred Given writes from Sandia Base, Albuquerque, N.M.: "I have been in Albuquerque for nearly a year now, working for the Sandia Corporation, which is a subsidiary of Western Electric Company. My title on this job, Director of Apparatus Engineering, tells the story that I am still in the same line of activity that I have been pursuing for many years with Bell Labora-

tories. The country is quite new and different; the apparatus applications are quite different but the job is basically the same. It is quite an experience for one who has spent over 50 years in the metropolitan and suburban areas of New York or Boston to be suddenly transplanted into the wide open spaces of the Southwest. Here one is separated from his family, old friends and former community ties by thousands of miles instead of a mere 10 or 20 miles. Here, at an altitude of some 5,000 feet, one's constitution requires adjustment to compensate for the rarer atmosphere. Even ordinary cooking habits and techniques require revision. A soft-boiled egg takes six minutes instead of four, and one has to have entirely new cooking recipes. The extreme dryness of the atmosphere changes and introduces new problems into everyday life. A shower of rain totaling .02 inches makes the headlines. To grow a lawn requires constant watering with sprinklers even in December and January when temperatures may be below freezing. . . . I am keeping in mind the 1954 reunion and hope that I will be able to join with you in celebrating our 35th."

Warren Maynard is still "telephone engineering" in Boston; now lives at 100 Memorial Drive, Cambridge; has two married sons and two granddaughters; sees Bill Banks and Wally Clark occasionally. He reports that Joe Cannell has now returned to work after a long illness. Leighton Smith reports that he finds his new work as Chairman of the Department of Chemical Engineering at Tufts College very interesting and is kept busy preparing course material and revising the Chemical Engineering curriculum.

George McCarten dropped a line from Cleveland inviting any 1919 men to visit with him when out that way. He expects to be in New York shortly, and we hope to see him again. Ark Richards writes that his pyrometer supply business has been going well and that he was on his way to Florida to get some of his winter vacation. He ran into Fred Britton'20, who now has an "Ad-Service, Incorporated," advertising consultants, at 16 Norwich Street, Worcester 8, Mass.

Ed Moody keeps so busy with the steel fabrication plant which he and his son have in Nashua, N.H., his activities as Scoutmaster and publicity chairman of the New England Sector, S.A.E., and his square dance calling and dancing, that he hasn't "opened his locker at the Nashua Country Club for a round of golf for three years." Ed is "The Village Blacksmith" of Hollis, N.H., but his mailing address is R.F.D. No. 1., East Pepperell, Mass. He has two grandchildren.

New ultramodern research facilities for Arthur D. Little, Inc., Cambridge, will be erected on the Concord turnpike in West Cambridge this year. Earl Stevenson is president of this well-known industrial research and engineering firm. The new structure will be situated adjacent to the building recently completed for Little's mechanical division. Congratulations, Earl. Glad to have a card from Albert Mayer, a member of the architectural firm of Mayer and Whittlesey, 31 Union Square, New York City. The years since he left M.I.T. have seen him in "diverse activity in various parts of the world." Rogers Johnson writes that his son, the father of that granddaughter Rogers is so proud of, is now in Korea.

Jim Hawkes has retired from the Panama Canal and now lives in Bojuco in the foothills in the interior of Panama, a delightful place with a wonderful climate. He concludes, "Haven't been to the States since 1939. Too comfortable here." He sends his regards. From Harry Mardoian: "Our globe trotting classmate Harry Kuljian spent his Christmas and New Year in India, returning home recently. During the first week in December we two Harrys had the distinction of being grandparents to one baby boy born in Philadelphia to my daughter, Lucille, and his son, Arthur (M.I.T. '48). At the end of January I will have a chance to see him again at my son George's (R.P.I. '48) wedding in Philadelphia. My other son Arthur (R.P.I. '52) is serving as an officer in the U.S. Army. I am still with the Conn. State Highway Dept. Merrily rolling along." — EUGENE R. SMOLEY, *Secretary*, The Lummus Company, 385 Madison Avenue, New York 17, N.Y.

• 1920 •

At the Alumni Midwinter Meeting in Walker Memorial, the following classmates were on hand: Ed Ryer, Joe Hennessy, Henry Hills, Herb Federhen, Phil Wait, Al Wason, Perk Bugbee, Scott Carpenter, Al Burke, Scott Wells, Ken Roman. Your Secretary was unable to be there, but the report is that it was enjoyable and successful, as always.

Mike Houghton is now in Rifle, Colo., address, Anville Points 20. Bill Shepard is in Chicago, address 623 Kenmore Avenue. Jack Bartholomew is in Detroit, address 18001 James Couzens Highway.

Alumni Council meetings are extra enjoyable this year for two reasons: (1) They are held in the new Faculty Club which has superb facilities for this purpose; and (2) the Class of 1920 is so well represented on the Council this year, what with Ed Ryer presiding and Al Burke, Jim Gibson, John Nalle, Bat Thresher, and the Bugbee twins all on the Council, plus Al Glassett when he can make it from New York, which is gratifyingly frequently. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

• 1921 •

Elliott B Roberts, Chief, Division of Geophysics, U. S. Coast and Geodetic Survey, with the rank of captain, is featured in a full page illustrated article in the Boston *Post* magazine. He is the head of the nation's first earthquake research program with a network of seismograph stations at strategic points all over the country and a new warning service, with headquarters in Honolulu, for predicting the coming of disastrous tidal waves generated by submarine quakes. Elliott is the author of numerous articles on offshore surveys, sonic methods and other navigational subjects. He is the inventor of a well known radio measuring instrument and a popular public speaker. He has recently initiated a program to encourage architects to build structures which can withstand the stresses of earth tremors. Under his direction, the Coast and Geodetic Survey has improved its equipment so as to pinpoint some 500 strong tremors each year. The warning service is principally to alert the Hawaiian Islands to seismic sea waves which travel at 500 to 600 miles per hour and which have caused enormous destruction as far as 4,000 miles from their origin. Elliott is a native of Roslindale, Mass., who prepared for Technology at Lowell High School. He was graduated with us in Course I and joined the Coast and Geodetic Survey shortly thereafter. He has served on many geodetic and hydrographic projects as executive and commanding officer. Captain and Mrs. Roberts have a daughter, Nancy.

Joseph W. Fowler, a retired rear admiral, is the subject of a full page illustrated feature article in another issue of the Boston *Post* magazine. It compliments his work as civilian head of the Defense Supply Management Agency, set up less than a year ago to compile a catalog of all articles purchased by the armed services, set up standard specifications, eliminate duplications, and standardize inspection and packaging. The group of 3,250 people at work on the project, 250 in Washington and the rest in the field, have catalogued two and one half million of the 15 million items bought by the services, and it is estimated that completion of the huge undertaking will save up to four billion dollars a year. The magnitude of the job is indicated by references to the purchase by the armed forces of some 20,000 different kinds of roller and venetian blinds and to the addition of 750,000 new purchased items since the Korean conflict began, an average of around 30,000 new items per month.

Admiral Fowler graduated from U. S. Naval Academy in 1918, served two years at sea in World War I and received his master's degree with us in Course XIII-A. He was responsible for procurement of materials and construction of new submarines at the Portsmouth Navy Yard, later the production officer in charge of outside forces at the Mare Island Navy Yard and then the organizer and administrator of the office of naval industrial manager at San Francisco, which prepared plans, ordered material and approved work on 200 naval vessels in 20 private shipyards. He commanded the San Francisco Naval Shipyard and, for two years, was director of the industrial survey division in Washington. He retired in 1948 with the rank of rear admiral and, for three years, was a partner in the San Francisco consulting engineering firm of Christy and Fowler. In 1951, he returned to active duty in Washington with the Munitions Board.

Carl Thumim is now manager of the manufacturing division of E. P. Lawson Company. He had been associated with the I.T.E. Circuit Breaker Company, Philadelphia, as chief engineer and was previously with the General Electric Company, where he received an award for his design of a high speed circuit breaker. He is a fellow of the American Society of Mechanical Engineers and a member of the American Society of Naval

Engineers. John W. Barriger, 3d, Vice-president, New York, New Haven and Hartford Railroad Company, is now located in his new offices in South Station, Boston, Mass. Edmund E. Brady has retired from the Navy with the rank of commodore and is now associated with the firm of George G. Sharp, Inc., naval architects, 30 Church Street, New York City. He won the Legion of Merit and the Commendation Ribbon in World War II. Rev. Everett R. Harman reports a new address in care of Holy Cross Hospital, 1045 East First Street South, Salt Lake City 2, Utah. John E. Shaw, owner of Shaw and Company, Los Angeles manufacturers representatives, has moved from La Jolla to a new home address in Rancho Santa Fe, Calif. New addresses have also been received for Axel G. H. Andersen, Elmer W. Davis, Ernest R. Gordon, Captain Ralph S. McDowell and Carlton A. Robinson.

Sidney Senzer has written an interesting letter, harking back to our days on *The Tech*. Now applying scientific precision to the creation of advertising (and some we've encountered certainly needed it), he has his own offices in Mamaroneck, N.Y., devoted to counsel, campaigns and commercials in the advertising field. Raymond G. Moses, retired brigadier general, makes his home at Hilton Farm, Sandwich, N.H., where he is active as civil defense director and in the local Red Cross chapter. In World War II, he was director of military supply, Corps of Engineers, and prior to that had been district engineer at Vicksburg, Miss. Until his retirement in 1949, he was New England district engineer with headquarters in Boston. He has numerous decorations, including two awards of the Distinguished Service Medal, Legion of Merit, Bronze Star, Commendation Ribbon, and the rank of officer in the French Legion of Honor. He and Mrs. Moses have two sons and two grandchildren. John, a graduate of West Point, is an Army captain; Garret was graduated from Babson Institute.

Lewis W. Moss is division engineer, maintenance of way department, New York Central Railroad, with headquarters in Cleveland, Ohio. A lieutenant colonel in the Army Transportation Corps during World War II, he received the Purple Heart. Son James, Purdue'45, is married and has a two-year-old-daughter. Goodman Mottleson is plant superintendent in charge of production, at the Wilson Laboratories, Chicago, Ill. He reports seeing Harold K. Moritz, who is professor of hydraulics in the College of Engineering, University of Washington, Seattle, Wash. The Mottelson's elder daugher, Ann, an Iowa graduate, is married and has a daughter. Ben received his doctorate from Harvard, is also married and has a son. Greta attended Miami University. Harry M. Myers, who took many excellent pictures of our 30th reunion, is treasurer of S. A. and H. Myers, Inc., Boston. He is assistant chairman of the Community Chest in his home town of Newton, Mass., and chairman of photography, U. S. O., Boston. Daughters Suzanne and Nancy are in school at home. Joseph D. Nagel, Jr., is the proprietor of Nagel Groves, citrus fruit growers and shippers of Winter Haven, Fla. He is vice-president of the Florence Citrus Growers Association and vice-president of the Villa Lumber and Supply Company. The Nagels have one son, Joseph, a graduate of Florida Military Academy.

Otto Nimitz, former Navy captain, has retired to a farm in Kerrville, Texas, and devotes his time to ranching. He and Mrs. Nimitz have one son, Charles, a Navy lieutenant, who has seen service in Korea. Daniel Noce, a major general, is chief of staff of the European command, U. S. Army. Son Robert W. Noce'46 was graduated from West Point and is an Army lieutenant. The Noces also have a married daughter, Mildred, and three grandchildren.

Through the courtesy of Mr. W. H. Nesbitt of Du Pont's engineering department, we have the following additional data on Joseph Henry Carr, whose passing was reported last month. He died in Baltimore, Md., on September 8, 1952, and was buried in Arlington National Cemetery. Born August 14, 1896, in Auburn, Iowa, he studied structural design at Iowa State, architectural design at Beaux Arts, Paris, and following his graduation with us in Course IV, took graduate work at Northwestern. For many years he was with the Chicago Board of Education as construction engineer and chief architectural engineer in design and construction of the city's schools. He had been with the architectural and civil section of Du Pont's engineering department as a designer since 1951. In World War I, he was a first lieutenant, aviation section of the Signal Corps, and in the last war he was a colonel in the Ninth Air Force from 1940 to 1946 and saw service in the European Theater. He is survived by his wife, Mrs. Jean Stewart Carr of Baltimore, Md.; two sons, James A. Carr and Dr. Dodd S. Carr; a daughter, Mrs. Catherine Carr Barnes; and two sisters, Mrs. Otto M. Smith of Stillwater, Okla., and Mrs. Herbert Holverson of Soldier, Iowa. Our sincerest sympathy is extended to his family.

Charles Holmes Herty, Jr., nationally known metallurgist and assistant to the vice-president of Bethlehem Steel Company's steel division, died on January 17, 1953. We also extend sincere sympathy to his family on behalf of the Class. Born in Athens, Ga., October 6, 1896, his father was a prominent chemical engineer and pioneer in the manufacture of pulp paper from southern pine. He received his bachelor's degree from the University of North Carolina in 1918, his master's degree with us in Course X and the doctor of science degree at M.I.T. in Course X-A in 1924. He was a research associate at the Institute's School of Chemical Engineering Practice, doing his research at the Lackawanna, N.Y., plant of Bethlehem Steel Company from 1924 to 1926, when he was appointed head of ferrous metallurgy research, U. S. Bureau of Mines, Pittsburgh, Pa. In 1931, he became director of research of the Metallurgical Advisory Board. He joined Bethlehem Steel as a research engineer in 1934 and, since 1942, had served as assistant to the vice-president, steel division. He brought about many improvements in steelmaking processes and devised the Herty viscosimeter for testing slag. He was recognized as a manganese recovery expert and contributed towards conservation of materials in the last war, serving on the War Production Board. In World War I, he served in Army ordnance. He is credited with fathering the science of physical chemistry in this country's steelmaking. In 1935, he received the Francis J. Clymer Medal from the Technical Society of Philadelphia for the "most meritorious achievement in the field of metallurgy." He won the Bradley Stoughton award in 1946. In 1947, he was honored with election to the National Academy of Sciences and in 1950, he received an honorary doctor of science degree from Lehigh University. A past president of the American Society for Metals, he was the Society's Campbell lecturer and recipient of its Sauveur award. He was Hunt Medalist and Howe Memorial lecturer of the American Institute of Mining and Metallurgical Engineers and the author of more than 80 technical papers. He was an Honorary Secretary of M.I.T. in Bethlehem, Pa., and had served as a member of one of the Institute's Departmental Visiting Committees. He was a member of the American Iron and Steel Institute, the British Iron and Steel Institute, American Chemical Society, First Iron Works Association, American Ordnance Association, M.IT. Club of the Lehigh Valley, Engineers Club of the Lehigh Valley, Newcomen Society, Phi Beta Kappa, Sigma Xi, Alpha Chi Sigma, Delta Kappa Epsilon, and the Saucon Valley Country Club. He is survived by his wife, Mrs. Kathleen Malloy Herty of Leithsville, Pa; four children, Mrs. Joseph Tropp of South Hadley, Mass.; Charles H. Herty, 3d, of Bethlehem, Pa.; Kathleen S. Herty, and Timothy Herty, at home; six grandchildren; a brother, Frank B. Herty, associate professor of mechanical engineering at the University of South Carolina; and a sister, Mrs. H. Philip Minis of Princeton, N.J. We are indebted to Mr. John C. Long, Manager of Publications, Bethlehem Steel Company, for aid in preparing these notes.

The annual Class Party will be held on the afternoon of Alumni Day, Monday, June 15, 1953, at the Hotel Statler, Boston, just prior to the Stein Banquet. Plan to be there. — Carole A. Clarke, *Secretary*, Federal Telecommunication Laboratories, Inc., 500 Washington Avenue, Nutley 10, N.J.

• 1922 •

C. Rogers McCullough of Monsanto Chemical Company spoke at the meeting of the American Association for the Advancement of Science in St. Louis last December. His talk concerned the feasibility of producing electric power commercially from atomic energy. Oscar H. Horovitz is heading a drive by the M.I.T. Boston Stein Club for $15,000.00 to establish a scholarship-loan fund for freshmen who are residents of the greater Boston area. Under the proposed loan regulations there will be no restriction as to the freshman's sex, religion, race or color. The loans will be made on an interest-free basis with the notes to be paid on agreed

dates. The borrower must show evidence of financial need, and it is contemplated that the average loan will be in the order of one-half to two-thirds of the tuition charge. Those who wish to contribute to this worthy cause should make their checks payable to Massachusetts Institute of Technology noting on the face of the check, Boston Stein Club Scholarship-Loan Fund, and then send them to Oscar H. Horovitz, 31 Montrose Street, Newton 58, Mass.

Parke Appel, Class Agent of the Alumni Fund, reports that up to the end of January our Class had 188 contributors, which is up 30 per cent from last year, and the amount contributed is $5,160.00, up 33 per cent from last year. This puts the Class in the top five or six in both number of contributors and amount contributed. All who have not as yet sent in their contributions to the Alumni Fund are urged to do so now, as the Fund will soon be coming to its yearly close. Any amount large or small, will be welcomed, but larger amounts will do more good. Erb Ditton, Research Director of the Gotham Hosiery Company and First Vice-president of the American Association of Textile Technologists, Inc., made the introductory remarks at the Association's Meeting at the Hotel Statler in New York last February 3. Lloyd E. Raymond, Metallurgist of the Singer Manufacturing Company, Bridgeport, Conn., was the winner of the $1,000 first prize with his paper in the "Economy in Production" contest of the Tocco Induction Heating Division of the Ohio Crankshaft Company of Cleveland. Raymond's paper showed how the Tocco process had reduced hardening time 62 per cent in the manufacture of parts for Singer Sewing Machines.

Ray Rundlett and Dale Spoor, Class President and Assistant Treasurer, respectively, came up from New York for the Annual Midwinter Meeting held in Walker on February 5. Other '22 men in attendance were Warren Ferguson, Dave Abrahams, Fred Dillon, Jr., Jack Hennessy, Bob Brown, Parke Apel and Walter J. Croft, Jr. Others reportedly there, but who did not come within the vision of your Secretary were Ed Bowles, Art Craig, Minot Edwards, Bill Freeman, Ed Hobbs, John F. Pierce, Homer Richards, Sam Seegal, and Ros Sherbrooke. The foregoing list is a reminder that Sam Seegal is vice-president at Filene's, and that Ros Sherbrooke has a 45-foot cutter which will be based at the Cohasset Yacht Club – all sailors take notice. Jack Hennessy is rumored to be the only man in the Class whose wife can beat him at golf, if not regularly, at least on occasion.

While it is realized that modesty is a ruling virtue of our classmates with respect to their own activities, would it not be possible to let your Secretary know what the children are doing, other than getting married. Some of them must be embarking on careers of interest. The two Chittick boys are in the service, C. Y., Jr., being an ensign in the Navy and flying the Banshee Jet from carriers and from the Jacksonville air base. John, a second lieutenant in the Marines, is in the process of learning to fly at Pensacola.

It is again with regret that we report another death – that of John A. Hayes of 48 Hopedale Street, Hopedale, Mass., on January 22, 1953. No information has been made available as to the circumstances. Our sympathy is extended to his family.

New addresses: Lester C. Lewis, 117 Glen Parkway, Hamden 14, Conn.; John L. Liecty, 4222 North 2nd Avenue, Phoenix, Ariz.; Charles G. Moore, The Glidden Company, 1855 North Le Claire Street, Chicago, Ill.; Ian H. Parsons, 107 Hatherley Court, London W2, England; Herman P. Plaza, Ferrocarril Arica LaPaza, Arica, Chile, S.A.; Major Roland L. Smith, 405 Revere Street, Winthrop 52, Mass.; James A. Stalbird, New York State Department of Health, Milk and Restaurant Sanitation Section, 18 Dove Street, Albany, N.Y. – C. YARDLEY CHITTICK, *Secretary*, 41 Tremont Street, Boston 8, Mass. WHITWORTH FERGUSON, *Assistant Secretary*, 333 Ellicott Street, Buffalo 3, N.Y.

• 1923 •

Sometime this month we will probably get the last mailing to you about the 30th Reunion, June 11-14, 1953. The place is the Sheldon House at Pine Orchard, Conn., which is near New Haven. Channing P. Clapp, 210 Main Street, Matawan, N.J., is chairman of the Reunion Committee.

This last mailing is the one to which you must respond if you want reservations. As mentioned last month, the facilities should be adequate to take care of the number of people coming. There is not very much leeway, so to get the accommodations you wish, you should respond promptly to the reservations mailing.

A number of members of the Class have been getting their names in the paper. Robert C. Sprague, North Adams, Mass., electronics manufacturer, was named Undersecretary of the Air Force by President Eisenhower, but got caught in the wrangle about stock ownership. At any rate, after being nominated and spending a month in Washington, Eisenhower's advisers decided they could not send his name to the Senate for approval. – James S. McDonnell, Jr., head of McDonnell Aircraft Corporation of St. Louis, has been responsible for a considerable number of airplane models in his time. *Aero Digest* magazine for September, 1952, devoted 13 or 14 pages to some of McDonnell's airplanes, featuring the latest *F2H-3* Banshee, hailed as the Navy's longest ranging, highest flying, fighter aircraft.

Your Assistant Class Secretary, Howard F. Russell, was mentioned along with the executives of a considerable number of other large organizations who had moved their offices to the country from downtown New York. A *Fortune* article, December, 1952, mentioned the Improved Risk Mutuals, of which Russell is general manager, as one of the groups in the city-to-country trek. The Improved Risk Mutuals is a group of 11 associated mutual fire insurance companies.

The *Fortune* story recorded that by late 1952 the managements of some 50 companies, with offices in New York City, had acquired property in suburban Westchester County with the idea of moving most or all of their offices out of congested Manhattan. Some, like the Improved Risk Mutuals, had already moved into castoff mansions. Some, like Associated Reciprocal Exchanges, another insurance group, had built air conditioned offices in open fields at Rye, N.Y. Others, like General Foods and Nestle Chocolate, were putting up imposing structures close to the center of a suburban town or city, the most favored city being White Plains, N. Y. Russell gets credit for being one of the first to start the trek to Westchester and the other suburbs, a movement that includes at the moment, according to *Fortune*, almost any big company.

Russell says his experience is like that of many of the other executives who considered this step. They are being accused of wanting to put their offices in their residential backyards. Also, they are charged with running away from the A-bomb. Management's interest in suburban offices rose most sharply right after civil defense activities were stepped up three years ago. One consultant reported to *Fortune* that every one of 22 companies that sought his advice about land sites in Westchester privately revealed that, among other things, they wanted to avoid target areas. I have had numerous conversations with Russell on this latter point. It was, of course, one factor to be considered, but it would not have been the major, or most compelling factor, if the other reasons for moving did not seem to be pretty good.

Russell is now erecting a new building in White Plains and is satisfied that the move was very desirable. He found, for example, that he did not lose a single key employee as a result of moving out. Clerical staff replacements in White Plains proved a better type, and turnover in personnel dropped drastically after the move.

Robert V. Burns is in Haiti, as we reported last month. A letter from him says that he and his wife, Lillian, are planning a trip to Europe for this summer, so a conflict may arise between a proposal to come back to Tech for the 30th Reunion and the European trip. He has added the following about Haiti to his recent letter: "Haiti occupies the westerly one-third of the island of Santo Domingo; the Dominican Republic occupying the other two-thirds. From Miami to Port-au-Prince is about 700 miles. Planes usually cover the distance in four hours or less with a stop-over in Cuba. The island has apparently risen out of the sea, as we have found seashells in the subsurface explorations at the dam site in the hills. The area is about 10,000 square miles; the population about 3,500,000. Of the total area, about seven-eighths is mountains. However, the valleys are rich with deposits laid down during floods The time has come when the valleys must be developed to feed the people.

"Most of the people here are dark skinned, of Negro origin, but there are many with mixed blood – mostly French mixture. The country was originally a French colony which gained its independence during the Napoleonic wars. In general, the people have a good physique, as most of the original stock was carefully selected before the people were

brought here. At present, malnutrition and starvation are plentiful so many of the people are skinny.

"Port-au-Prince is fairly modern and is getting more modern each day. Traffic lights have just been installed, and one-way streets are common in the business section now. However, in the country sections the peasants live in small thatched houses – free of mortgages – and have small gardens close by. The houses are typically African in style; in fact, the customs and habits of the peasant people are typically African. Most of the gardens are composed of rocks or stones, so it is difficult to raise crops and the yields are generally poor. Most of the peasants raise hens and chickens, goats, perhaps a horse or a pig, or a donkey. The crops grown include cotton, corn, rice, sugar cane, cocoanuts, bananas, vegetables, and fruits. Milk and butter are very scarce. Cheese is practically unknown. Eggs are plentiful but small; turkeys sell for $2.00 to $3.00 – very cheap. Filet steaks cost about $0.20 per pound. Rice and red beans are the principal food of the country people, but oranges, grapefruit, avocados, pineapples, corn, or maize as it is called here, and sweet potatoes, are used extensively. Flour comes from Minneapolis – and the flour sacks are frequently used to make dresses or underwear. Flowers grow well when supplied regularly with water. Flowering shrubs and trees are common.

"In summer, from May to October, it rains every afternoon between four and eight o'clock. This rain helps to cool things off – usually with a drop of about 20 degrees F., so one can sleep. The early mornings are beautiful and it is generally hot till 3:00 P.M. In winter, from November to April, it is quite dry and warm but not too hot. At night, the temperature drops to about 60 degrees F., and in the daytime it may reach 85 degrees F., so it is quite comfortable. Altogether, from my travels in other countries, it seems that Haiti has a pretty nice climate.

"Transportation is bad here. The roads are poor, being wet and muddy in summer, and dry and dusty in winter. There is one small railroad, about 100 miles in length – not in very good condition. Women carry most of the goods to market on their heads or on pack animals, such as donkeys or horses.

"Education has been neglected. About 93 per cent of the people are illiterate and about three per cent of the children go to school. The general health is good but there are many cases of yaws, V-D, malaria and dysentery. Most of the people belong to the Roman Catholic Church, but voodoo and evangelism are also a sort of religion here. The land is peaceful now, but there is some thieving at times. Marriage is of the common-law type. There are many children everywhere. Our project with 80,000 acres under irrigation will help to provide food for the hungry while the flood prevention and drainage will relieve a lot of suffering."

The Boston *Herald*, December 21, 1952, contained a record of the announcement of the engagement of Miss Dorothy M. Valentine of Northboro to Gerald Putnam of Arlington. Putnam is assistant professor of engineering graphics at M.I.T.

Harold A. Dambly, who had been engineer in charge of the Testing Division for the Philadelphia Electric Company, died January 15. Dambly had served as vice-president of the Philadelphia Science Council and was active in work of the American Society of Testing Materials and the Edison Electric Institute. He lived at 903 East Strafford Street, Philadelphia, and is survived by his wife, the former Alva A. Schultz of Norristown, and two children, John W., of Collingswood, N.J., and David A. Dambly, a student at Pennsylvania State College.

Ab Johnson, President of the Warner Machine Products, Inc., of Muncie, Ind., wrote that he thought his schedule was going to work out fine to make the reunion because our dates fitted in very well with some other traveling to which he was committed anyway. He passed along one item of bad news, however, and that was with respect to the death at Albion, N.Y., on December 29, of Schuyler Hazard, Jr. Hap Hazard's many friends knew that he had been gassed in World War I, and he suffered recently from chronic asthma and other respiratory troubles. – HORATIO BOND, *Secretary*, National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass. HOWARD F. RUSSELL, *Assistant Secretary*, Improved Risk Mutuals, South Broadway, White Plains, N.Y.

• 1924 •

The new president of the M.I.T. Club of Southern California in Los Angeles is none other than William H. MacCallum. This really creates a confusing situation. For years Bill has been working for your Secretary in the capacity of traveling correspondent. But your Secretary is also Alumni Council representative of the Los Angeles Club, which means that he is now working for Bill. Maybe we'd best just call it a mutual benefit association.

New York Telephone Company recently announced that James E. Buckley is their new division superintendent of buildings and supplies in Albany. Buckley, a Course VI-A graduate, has been with this company since 1928.

"Return To Dark Ages Seen If Science Lags" was the ominous headline of a story announcing the award of the 1953 Perkin Medal to Dr. Charles Allen Thomas. The award, one of the most important in the chemical field, was made in recognition of his contributions to the chemical technology of automotive fuels, catalysts and atomic energy. Annual meeting of the stockholders of the Merchants National Bank of Bangor (Maine) added four new members to the Board of Directors. One of them is Harold Holden, President of the Eastern Corporation.

At last we have the straight dope on Lefty Walker. Seems that Lieutenant Colonel Hugh L. Walker was discharged on December 1, 1952, and came back to Boston to pick up the insurance business where he left off. Then one day a prospective customer unburdened his business troubles to Lefty, who found them interesting, made some suggestions, and wound up as vice-president and general manager of Atomic Instruments, Inc. That's an outfit right across the street from the Institute, making all manner of highly specialized devices. We thought George Harrington made quite a switch when he went from leather to electronics, but insurance to atomics is even more so.

If you run across a little book called *Adam und die Frauen* and see Sam Shulits' name on it, don't be surprised. It's a translation of Pat Frank's *Mr. Adam*, a story of atom-bomb sterilization of every male in the world except one, Homer Adam. More in Sam's line, however, is a paper he's giving in May at the American Geophysical Union meeting in Washington; its title: "Graphical Analysis of Trend Profile of a Rectified (Shortened) Section of River." Something about a watch he's been keeping on the Rhine.

Short column this month. Hope for more news next time – HENRY B. KANE, *General Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

• 1925 •

All of you will be shocked to learn of the death on January 2, 1953, of Frank W. Bemis, Jr., III. Frank was president of the Omaha, Neb., Commercial Savings and Loan Association and has made his home in Omaha for the past eight years. He formerly worked for the American Steel and Wire Company and the American Chain and Cable Company. He is survived by his wife, Mrs. Agnes (Fitzgerald) Bemis and two sons, Francis and James, both of Omaha. Frank was well known to all of his classmates and your Secretary has sent condolences to his widow.

Word has been received of two other deaths, namely, Daniel Gurney, VI-A, of Lakewood, N.Y., on February 3, 1953, and quite belatedly, Commander Kimikata Nagamine, VI, on March 17, 1945.

Possibly many of you saw in the newspapers about January 31, that the first book to be composed by a new photoelectric process instead of by metal was being presented to the library of the Institute by the Graphic Arts Research Foundation, Inc., which developed the process. Of particular interest to the Class of 1925 should be the fact that Samuel H. Caldwell, VI-A, Professor of Electrical Engineering at M.I.T., is the research director of the Foundation.

The name of Professor K. T. Bainbridge, VI-A, appears as one of the authors of a new book on experimental nuclear physics recently announced by John Wiley and Sons, Inc.

A post card from Tony Lauria, II, states that he and his wife and son recently spent two and a half weeks visiting three of the islands of Hawaii. A change of address indicates that Tod DeFoe, IX-B, has moved from Windsor, Vt., to Mexico City. We are looking forward to receiving details regarding Tod's new venture and, in the meantime, wish him the best of luck.

Our Class was well represented at the Midwinter Meeting at Walker Memorial on February 5. Eighteen of those present signed the Register, and therefore have their names listed below: Jim Howard, Frank Turnbull, Willard Allphin, Ed McLaughlin, Sam Glaser, David Goldman, True D. Canney, II, Forrest D. Kent, Wally Westland, Ave Stanton, Ed

Kussmaul, Ralph W. Lewis, Ralph O. Ballentine and son, John W., Ed Murphy, Fred Rice, L. T. Gregory, Courtney Worthington and Robert Hodson. We guessed that there were more present at the Alumni Midwinter Meeting, but since they failed to sign the Register, we, unfortunately, cannot list them.

The Class Standing Committee met in the Secretary's office on January 19 and, among other matters, voted to continue the annual request for $1.00 dues from each class member. By the time you read this you will probably have received the request, and this will serve to remind you to remit, if you have not already done so. It was voted to have another April meeting of the Class of 1925, and the date has been set for Thursday, April 16, 1953, in the M.I.T. Faculty Club at 6:30 P.M. Don Severance will represent the M.I.T. Alumni Association and talk to us, and Julius Stratton'23, Vice-president and Provost, will be our other speaker. Notices of this meeting will be sent to those within driving distance of Boston, and any of you at greater distances who can be in Boston on that date should join us. Just contact your Secretary at M.I.T. regarding reservations. It was further agreed that the Class would join in the overall cocktail party at the Alumni Banquet in 1953 instead of having our own private party. — F. LEROY FOSTER, *Secretary,* Room 5-105, M.I.T., Cambridge 39, Mass.

• 1926 •

Do any of you ever peek into the other classes' notes — I do! I'm also surprised (and flattered) every now and then when someone from another class asks how things are down in Pigeon Cove, indicating that they read our notes, too. A lot of people who read our notes seem to think that we are living at Pigeon Cove all of the time but, doggone it, we are just there week ends. When I spoke of peeking at what the other class secretaries say, I really was looking to see if they have problems, too — boy, do they! Here are some quotes from the notes in a recent issue: "We regret that no notes appeared in The Review for the past two months, but no items were received by the Secretary"; another, "Unfortunately, my present supply of information regarding any of our classmates is very small"; and another, "The lack of news of our Class has become acute"; and, "It is with deep regret that I have to announce the death" — whoa! We didn't mean to quote that one, but these quotes illustrate that other secretaries have to scratch for news too. Now let's get back to Pigeon Cove, a spot where you or I would have a tough time making a living, but, perhaps because of this, find it very easy there to forget our making-a-living problems. I have always been fascinated by the sea, and I am never really happy when far away from it, although until some deserving scientist discovered the sea-sick remedy, "dramamine," I had no desire to own a boat and kept off the water.

Books about the sea seem much easier to read when the waves are murmuring (or roaring) outside the window, and gradually I seem to be acquiring a library of such books. The other evening when the sea outside was particularly rough, I read Ernest Hemingway's inspiring short story *The Old Man and the Sea.* As a matter of fact, I have developed a crazy habit of reading two or three books simultaneously and will leave a poor fellow on a raft in the Pacific (*Kon-Tiki*) to join a whaler in a bar in New Bedford one hundred and twenty-five years ago (*Moby Dick*). I think I do this because I hate to finish the books. Most of you, no doubt, read the recent *Life* feature article, "The Mystery of the Sea," which not only revealed a lot of new knowledge about the sea but also called attention to certain obvious facts that many of us overlook, such as the tremendous amount of sea on the earth — about 75 per cent of the surface. Also revealing was the fact that if all of the land areas of the earth were leveled into the valleys of the sea, there would be water a mile deep covering the surface of the globe. If I climb down the cliff and dunk my big toe in the ocean, some of that same water may have washed the toe of some Australian, or even the toe of Julius Caesar — it's been there long enough. The tides which are about nine feet here are only one foot at Tahiti and at Nantucket. The ocean is a tremendous reservoir of heat — water having the second greatest capacity to store heat of any substance. We are constantly reminded of this when we leave Winchester with a foot of snow and drive 45 miles to Pigeon Cove to find the ground bare due to the tempering effect of the sea. Yet after a nor'easter has been driving unceasingly for three or four days, it is a tremendous relief to get away from it, or to have it calm again.

While dining with some business associates at the Du Pont Hotel in Wilmington this week, I felt a hand on my shoulder and looked up with surprise to see Jack Larkin. Jack and his wife were dining at the next table with "Bull" Roberts' wife and your Secretary dropped over for a little chat. We recently mentioned that Bull is now with the Du Pont engineering department and is located outside Wilmington in the Louviers Building, and Mrs. Roberts gave me his extension number. We were unable to call him at the time of this visit, but planned to talk with him sometime in the near future during the noon hour when our Boston-Wilmington tie-line is free. Jack said that he had dropped in to see George Edmonds, but George happened to be in New York, so your Secretary made no effort to contact him on this trip. We tried to get Howard Humphrey on the phone and we ended up calling one another back at least five times without making a connection. The voice that answers the phone at Howard's home is presumably that of his son, and it sure sounds exactly like Howard. We will try to contact Howard via the tie-line, also, one of these days. The one successful call we were able to get through was to Bill Vaughan at his home in Media, Pa. Bill reports everything copacetic both on the home front and the work front. He is with Sun Oil Company at Marcus Hook, as you know. Pete Doelger came over from New York to spend this week end at his place in nearby Lanesville, and your Secretary is meeting him a little later this Sunday morning to run over to Gloucester and look over a power boat in which Pete is interested.

With our great interest here in the sea and its many ramifications, we fear that we have not been in close enough contact with one of our classmates from Canada, Louis Bérubé, who directs the fisheries courses at Laval University in Quebec and at the Trade School for Fishermen at Grand River. You will recall that we mentioned in these notes a couple of years ago that Louis invited any or all of us to drop in to see him at either of these locations, and before another summer passes, your Secretary is going to make a strong effort to do just that. Meanwhile, we plan to write Louis and find out a little about what is taught in a fisheries school, and we are sure that we will develop some interesting stories for you about what is under the surface of this great sea that we see in such broad expanse from our little spot on the cliff here at Pigeon Cove.

You will recall that in a recent issue we mentioned that Stewart Perry was a very ardent radio ham, and that we planned to ask him if there was any way he could contact our classmate Bill Rivers over in Calcutta by radio and give him a friendly message from the Class. We saw Stewart at the Midwinter Meeting of the Boston Alumni and asked what he could do about it. Stewart explained that it is impossible to send out a message to an individual in this manner, at least in a foreign country, because the amateurs could be accused of competing with the commercial communications services. However, if Bill Rivers can dig up some friend or acquaintance who is a radio ham in Calcutta and go to his station at a prearranged time, he can then communicate directly with Stewart Perry. If Bill, or any other classmate in any part of the world, can make such a connection, Stewart will be more than pleased to hear from him, and your Secretary will try to be at Stewart's radio station also, provided the prearranged time does not come at some weird hour such as 3:00 A.M.

We mentioned that Stewart Perry was at the Midwinter Meeting of the Boston Alumni and so were 14 other greater Boston Alumni — not a bad turnout. Those who attended were as follows: Mort Woodason, Dominic Sicari, Malcolm McNeil, Bud Wilbur, (and his wife, Lillian), Cedric Valentine, Ben Margolin (and his wife), Roger Smith, Pink Salmon (and his sons Bogie, Bill and his wife, Mary), Al Dolben, Nick Carter, Don Cunningham, Marvin Pickett, and Ole Olander. This reminds us that it won't be long now before we start thinking about Alumni Day, and, if 16 of us can turn up for the Midwinter Meeting, we should practically pack the house on Alumni Day.

Since starting these notes the barometer has dropped and it has started to rain hard so the little junket that Pete Doelger and I had planned to make later in the morning is off, but I just remembered while writing that a friend of mine told me about a cabin cruiser for sale somewhere up on the Maine coast at a terrific

bargain price, so I'm going over to see Pete anyhow and pass this dope along. Once again I am amazed at where the current issue of class notes came from. I sat down here a couple hours ago with no clippings, no letters but well surrounded with thin air, and somehow out of the thin air we have whipped up another issue. There are still a great many classmates who are off the beaten path, who do not remember the present Class Secretary, who may think that we would not be interested in hearing from them, or who, for some other reason, hesitate to come out of hiding. Please be assured one and all that whoever you are, whatever you are, or wherever you are, if you are a member of the Class of '26, everyone who reads these notes will be delighted to have a word from you. So until May – cheerio! We have just talked with Stewart Perry and learned that his call numbers are W1BB. – GEORGE WARREN SMITH, *General Secretary*, E. I. du Pont de Nemours and Company, Inc., Room 1420, 140 Federal Street, Boston, Mass.

• 1927 •

There are a half-dozen items of interest this month – all in the business category. Art Connolly, who left Du Pont in 1942 to open his own law office, has now formed a new partnership – Connolly, Cooch and Bove, with offices in the Delaware Trust Building, Wilmington 1, Del. The partnership will specialize in patents, unfair competition, and antitrust matters. Clarence L. H. Wynd, 37 Jefferson Road W., Pittsford, N.Y., has been named assistant general manager of Kodak Park Works, Eastman Kodak Company. He has been with Eastman since graduation.

Tom F. Russell, Vice-president of the Highway Equipment Company, has set up a new office for this company at Lucasville in Pike County, Ohio, to tackle the job of supplying equipment for the vast atomic energy plant which the Government is building there. In recording the event the Cincinnati *Post* gives the following description of the Russell family: "The Russells have a daughter, Anne, 18, who is a student at Sweet Briar College in Virginia, and a son, David, 16, at Castle Heights Military Academy in Tennessee. Mr. Russell is a member of the Amberley Village council. In his spare time he likes boating and fishing on Lake White. There isn't much spare time any more though." (Incidentally, this clipping was sent in by Dan Metzger, and your Secretary hopes that others of you who see news of our classmates will send it in).

Richard Cutts, Jr., 2120 Grand Boulevard, Schenectady, N.Y., who has been with General Electric since graduation has now been named a manager in General Electric's standards services department. The Stamford *Independent Republican* records that Ed H. Wells of 34 Richmond Drive, Darien, Conn., has been appointed assistant to the merchandise manager of the Johns-Manville Corporation, N.Y. He is married and has two children.

The annual meeting of the Institute of the Aeronautical Sciences brought out the usual group of classmates, including Hank Kurt, Bud Gillies, Tom Knowles, George Brady and Colonel Ben Kelsey'28.

The Reunion Book has come out of the red, but we are still accepting orders. – JOSEPH S. HARRIS, *General Secretary*, Shell Oil Company, 50 West 50th Street, New York 20, N.Y.

• 1928 •

We can begin our class notes column this time with an announcement which I am sure will prove of extreme interest to our classmates. Ben Kelsey, who has been in the Army ever since graduation, last spring was promoted from Colonel to Brigadier General in the Air Corps. Ben is still stationed in Washington, D.C.

Bill Carlisle, Chairman of our 25th reunion, reports that responses have been most heartening to the first announcement of our family reunion scheduled to be held on June 12, 13, 14, and 15, with full participation in Alumni Day activities on June 15. In case any of you have missed the announcements, the program follows.

Friday, June 12 – 2:00 P.M. Registration begins – Reunion Headquarters, Baker House; 3:00-5:00 P.M., Swimming or observing from Spectators Gallery for Alumni and families – M.I.T. Alumni Pool; 6:00-7:00 P.M., Cafeteria dinner (Pay as you go) – Graduate House; 8:00-12 Midnight, Informal Get-Acquainted Dance and refreshments for alumni, wives and older children – Baker House Dining Room; Bull Session – Cocktail Bar, Baker House Masters Playroom; 8:00-10:00 P.M., Colored movies for younger children – Graduate House Campus Room; 7:45-12:00 Midnight, Counselor supervision for 10-15 year olds in dormitory.

Saturday, June 13 – 8:00-9:30 A.M., Cafeteria breakfast (Pay as you go) – Graduate House Dining Room; 8:00-11:00 A.M., Cafeteria breakfast (Pay as you go) – Burton House Snack Bar; 9:00-12:00 Noon, Tour of M.I.T. for alumni and families starting from Baker House every 15 minutes and terminating at Hayden Library Music Room; Sailing, 40 boats for qualified alumni and families – M.I.T. Sailing Pavilion; 9:00-12 Noon, Tennis – for alumni and families – M.I.T. Tennis Courts; Golf – for alumni – Sandy Burr Golf Club; Mid-morning refreshments – Small Buffet Table with Bowl – Walker Memorial, Pritchett Lounge; 12:00-2:00 P.M., Buffet luncheon for alumni and families – M.I.T. Faculty Club, Sloan Building; 2:00 P.M. promptly, class picture for all alumni and families – front steps of Sloan Bldg.; 2:30 – 3:30 P.M., Father and Son/Daughter Softball Game – Briggs Field; Sailing – Sailing Pavilion – if desired for children; 4:00-5:30 P.M., Water Carnival and swimming – Alumni Pool; Tennis – Tennis Courts – if desired for children; 6:30-10:15 P.M., Class Dinner for members only – Faculty Club, Sloan Building; 6:30-7:30 P.M., Pre-concert Dinner for wives, daughters and sons – Baker House Dining Room; 7:45 P.M., Buses leave for Pops Concert in Symphony Hall – front of Baker House; 10:15 P.M., Buses leave from Pops Concert in Symphony Hall – Mass. Ave. side of Symphony Hall; 10:30-12:00 Midnight, Informal Juke Box Dance for alumni, wives, and older children – Baker House Dining Room; 7:45-12:00 Midnight, Counselor supervision for 10-15 year olds in dormitories.

Sunday, June 14 – 8:00-11:00 A.M., Cafeteria breakfast (Pay as you go) – Graduate House Dining Room; 9:00-12 Noon, Cafeteria breakfast (Pay as you go) – Burton House Snack Bar; 10:00-12:00 Noon, Bus tours of Boston for alumni and families – leave front of Baker House; Religious services – check time schedule of religious services to be held in neighboring churches and temples; 1:00-3:30 P.M., New England Shore Dinner for alumni, families and special faculty guests – Walker Memorial; 4:00-5:30 P.M., Charles River boat ride to Eliot Bridge and return for alumni and families – starting from Sailing Pavilion opposite Walker Memorial – in case of rain, Movies for alumni and families – Room 10-250, Main Building; 6:00-7:00 P.M., Buffet supper – Baker House Dining Room; 8:00-9:30 P.M., All-Tech Show for alumni and families in Room 10-250, or Baker House; 7:45-12:00 Midnight, Counselor supervision for 10-15 year olds in dormitories.

Monday, June 15 – 7:30-9:30 A.M., Cafeteria breakfast (Pay as you go) – Graduate House Dining Room and Burton House Snack Bar; 9:30 A.M., Alumni Day Activities for classmates and wives; 9:30-11:30 A.M., Visit to Boston Science Museum for 10-15 year olds and up – bus leaves Baker House; 12:00-2:00 P.M., Luncheon for 10-15 year olds with counselors at Walker Memorial Cafeteria – Pay as you go; 2:00-5:00 P.M., Sailing on the Charles for 10-15 year olds with counselors; 5:00-6:30 P.M., Dinner for children all ages with counselors at Graduate House Cafeteria – Pay as you select; 7:00-9:00 P.M., Swimming party for all sons and daughters with counselors in M.I.T. Alumni Pool; 9:00-12:00 Midnight, Counselor supervision for 10-15 year olds in the dormitories.

All men who haven't responded as yet to the reunion publicity are urged to do so at an early date so that Bill Carlisle and his hard-working committee can make plans. The Institute authorities have been most co-operative in making arrangements which will permit returning classmates, their wives, and children over 10 to enjoy the new campus at the Institute and to see the many new developments which have happened since 1928.

Walter Smith, Chairman of the Class Record Report, urges that all men who haven't sent in their questionnaires do so promptly after reading this column, as time will not permit late arrivals to be included and have the book out by June 12.

This year is the biggest one ever for 1928. Plan to attend your 25th. Come back to Tech and bring your wife and children. You will all enjoy it. To date we have heard from the following who are planning to come back: Mr. and Mrs. Gilbert J. Ackerman; Mr. and Mrs. George A. Bernat and two sons; Mr. and Mrs. William D. Birch and one daughter; Mr. and Mrs. D. Yancey Bradshaw; Mr. and Mrs. Vincent R. Caputo and two daughters; Mr. William H. Carlisle, Jr.; Dr. and Mrs. John W. Chamberlain and one daughter; Mr. and Mrs. George I. Chat-

field and one daughter; Mr. and Mrs. Dudley F. Collier and one son; Mr. and Mrs. John G. Collins and one son and one daughter; Mr. Robert W. Cook; Mr. and Mrs. James Donovan and two sons; Mr. and Mrs. William I. Gorfinkle; Mr. and Mrs. Elisha Gray; Mr. Roger W. Haven; Mr. Ames B. Hettrick; Mr. and Mrs. John G. Houpis; Mr. and Mrs. George S. Hubbard; Mr. and Mrs. Ralph T. Jope and two daughters; Mr. and Mrs. Arthur C. Josephs; Mr. Robert G. Kales; Mr. and Mrs. William J. Kirk and three sons; Mr. and Mrs. Thorwald Larson and one son and one daughter; Mr. and Mrs. Gerard A. MacGillivray and one son and one daughter; Mr. Louis C. Miller; Mr. and Mrs. Carl F. Myers; Mr. and Mrs. Karl H. Otte; Mr. and Mrs. George P. Palo; Mr. and Mrs. John G. Praetz, Jr., and one daughter; Mr. and Mrs. James R. Rae and two sons and one daughter; Mr. and Mrs. Claude H. Rice; Mr. Charles E. Richheimer; Mr. and Mrs. John B. Russell, Jr., and one daughter; Mr. Rene W. Simard; Mr. and Mrs. Rudolf S. Slayter and one son; Mr. and Mrs. Walter J. Smith and one daughter; Mr. Donald M. Sturznickle; Mr. J. Edwin Ure; Mr. and Mrs. Raymond L. Wofford; Mr. and Mrs. Abraham Woolf and two sons.

The following are hopeful of coming back: Mr. Charles E. Berry; Mr. Kenneth A. Clark; Mr. Chester M. Day; Mr. John H. Draper, Jr.; Mr. Roland D. Earle; Mr. Thomas G. Harvey; Mr. Benjamin K. Hough, Jr.; Mr. Walter F. Mattlage; Mr. Maxwell Parshall; Dr. Howard S. Root; Mr. Carroll C. Smith.

Remember the date: June 12, 13, 14, and 15. It will be the biggest party ever in the history of our Class. "Come back to Tech" to see familiar faces and familiar places. Don't miss it! — GEORGE I. CHATFIELD, *Secretary,* 49 Eton Road, Larchmont, N.Y.

• 1931 •

At the present rate of supply it appears that it takes about two months to collect enough information for a column in The Review. Most of this month's news was received in the pleasant way Dave Schweizer, XVII, dropped in at the office and we had an enjoyable visit. Dave is one of the few members of our Class who is still working for the same concern since graduation. He is in the wholesale lumber business in the Schenectady area and has made a hobby of Christmas tree farming. At present Dave can leave the harvesting and marketing of the trees to his sons, one of whom intends to enroll at the Institute in another year.

Another pleasant surprise came last month. While conducting one of my classes on a plant trip through the Fore River Yard of the Bethlehem Steel Company, I met Fred Trescott, II. Fred was one of the mainstays of the rifle team along with Ken Clark and Ralph Hamilton. Fred is working on ventilation and air conditioning problems at Fore River, and it was marine air conditioning that the class was interested in observing.

A recent news clipping supplied information that George A. Peery, XVI, has resigned his post as Deputy Insurance Commissioner for Virginia to accept an executive position with the Government Employees' Insurance Company. Mr. Peery will head the actuarial division of the Washington Auto Casualty Company. He is widely known in the insurance field and is considered an authority on statistical planning. — AUGUST L. HESSELSCHWERDT, JR., *Secretary-Treasurer,* Room 3-242, M.I.T., Cambridge 39, Mass.

• 1932 •

I wonder if we knew that we had a rather famous Army postgraduate attached to our class when we were there. I have just learned that Major General Frank D. Merrill, who in World War II commanded "Merrill's Marauders," the famous outfit of jungle fighters in Burma, was with us and this certainly adds luster to our history. He is still scrapping as New Hampshire commissioner of public works and highways and presently taking up the cudgel for the states and trying to recover the two cents a gallon federal tax on gasoline for state purposes. Wonder how his tactics will make out against Ike?

Joe Paul is in the news as chairman of the 24th annual National Capital Area Auto Show. Joe is living in his native Washington and is very active in many associations, including the Washington Board of Trade, Washington Automotive Trade Association, Exchange Club, Touchdown Club and Kenwood Country Club.

Fred Henderson is busy building Northeastern University's competitive position with Technology. He is associate professor of Industrial Engineering, also director of the Veterans Office. He married Audrey Smith in 1942. The Hendersons live at 51 Beverly Road, Wellesley, Mass., and have two daughters: Carolyn Alva, five and a half, and Gail Elizabeth, three.

Thorndike D. Howe, Jr., is busy running his general contracting business, T. D. Howe Construction Company, Inc., in Houston, Texas. T. D. went to Harvard after leaving Tech, and, as he boasts tournament bridge as a hobby, he must be an able competitor to meet in this field. He and his wife, Amy C. Bygrave, are helping us big producers keep the class offspring average up with four children: T. D., 3d, 16, Olivia Anne, 13, Virginia Hayden, nine, and George E., six.

Another Texan is Homer Hunter, who with his wife, Pauline Steely, and son, Frederick, live at 6427 Bob-O-Link Drive, Dallas. Homer is also his own boss, running the Homer A. Hunter Associates, consulting engineers. He has been active in the Dallas Technical Club and also the Dallas Branch of the A.S.C.E. Homer complains about taxes, which increases one's envy for the independent operators.

Bud Imray has been moving up fast in Eastman Kodak. He is assistant vice-president and assistant manager of their Texas Eastman Division and is now down at their new major plant development site at Longview, Texas. Bud went to Harvard Business School after leaving Tech; married Catherine Stanton in 1933, and has three children: Jacqueline M., 18, Jane M., 14, and Howard H., 3d, 12. Texas seems to be getting a fair share of our classmates!

We find Sidney B. Jeffreys in Greensboro, N.C., a wonderful spot to live in. He also owns his own business, Jeffreys Engineering and Equipment Company, selling and engineering machine tools and metalworking equipment products. He and his wife, Angie Turner of Roanoke, Va., live at 904 Sunset Drive, Greensboro, N.C., with their two children: S. Bryan, Jr., 10, and Morris T., seven. Sid has a wide range of interests, including many hobbies and community activities: Chamber of Commerce, Youth Welfare, Y.M.C.A., Red Cross, and so on. He lists himself as a Democrat (southern style), but we understand he voted for Eisenhower. Good work, Sid!

Stan Johnson lives at 1611 Donald Street, Jacksonville, Fla. He is a resident engineer for Parsons, Brinckerhoff, Hall and MacDonald, a big New York firm, and is working on the Arlington Bridge construction there. Stan seems to spend much of his spare time away from his family (wife, Jane E. Harvey, and son, Harry R., 15) sailing, and is active in the Rudder Club of Jacksonville. During the war he was a major in the U.S. Army Air Corps.

Jack Kelton became a lawyer after he left Tech, getting his degree from Harvard. He is a member of the patent law firm of Watson, Johnson, Leavenworth and Blair, New York, and lives at Nutmeg Lane, Westport, Conn. He married Carol Copeland in 1935, and they have two girls: Carol, 14 and Joy, 12. I remember Jack as an ardent R.O.T.C. supporter at Technology and find that he served as lieutenant colonel in the artillery during the war.

R. Grice Kennelly, who got his master's with us in chemistry in 1932 and then went to Harvard for his doctor's degree, has moved up the ladder in research at Monsanto at their Plastics Division in Springfield. Grice is assistant to the Director of Research, and I can tell you is quite an expert on plastomeres and elastometers. He and his wife, Ellen Lee Bayard, live in the lovely Longmeadow suburb of Springfield at 115 Overbrook Road. Grice enjoys music, playing the piano and organ, and in his spare time seems for some reason to want to climb mountains.

Your new Secretary has enjoyed putting together the notes so far. I do wish that if any member of our Class feels so inclined he would sit down and just drop me a note about what he is doing, or would tell us if he knows something interesting about one of our other classmates, who might be too modest to tell us about it himself, for I am sure it would help build better notes and be of great interest to the Class as a whole. — ROBERT B. SEMPLE, *Secretary,* Box 111, Wyandotte, Mich. WILLIAM H. BARKER, *Assistant Secretary,* 45 Meridith Drive, Cranston, R.I. ROLF ELIASSEN, *Assistant Secretary,* Room 1-153, M.I.T. Cambridge 39, Mass.

• 1933 •

This is it — at long last after much prodding and persuasion on the part of

some of our classmates "yours truly" gathered together the following bits of information on the Class of '33. A "must" on your calendar is the week end of June 12 to 14 – the occasion of our 20th Reunion! Our preliminary conversations indicate that all 65 men who were with us in 1948 will be back and everyone who missed the 15th is planning to be with us this time. A grand week end is being planned with fun and relaxation with a bunch of guys "you knew when." By the time this is published you will have received announcements from the Committee under Fred Murphy, Lon Flanders, and Dick Morse – get your reservation in now!

William E. Rand, assistant director, Stanford University, Stanford Research Institute, is currently conducting a study of industrial air pollution, particularly above the rapidly expanding city of Los Angeles. One of the reasons that smog hangs over the city is due to its geographical make-up. The county is situated in an enormous basin confined on three sides by mountains and on the fourth by the Pacific Ocean. A layer of warm air hangs over the basin most of the year. This acts as a lid to limit escape of contaminated air. By resting against the mountains, it also prevents the prevailing westerly winds from carrying pollutants eastward. The only escape is through widely separated narrow canyons – a poor egress at best. Mrs. Maria B. Carpenter recently resigned her position as director of health education of the Essex County Health Association of Lawrence, Mass. During last summer, John G. Trump was guest speaker at the annual clambake of the M.I.T. clubs of Rhode Island, Fall River and New Bedford in Bristol. Speaking before 150 Alumni of M.I.T., Dr. Trump told of the great strides high voltage X-rays are making in mankind's fight against cancer. As a professor working closely with the X-ray treatment of malignant diseases, Dr. Trump has helped treat 500 cases at the Boston Laboratories of M.I.T. The effectiveness of the new type X-rays over standard types was proven by the professor. He recalled how the first patient treated at Boston three years ago was then "beyond hope" but today is alive and shows no symptoms of the malignancy.

The September 4 issue of the Waltham *News Tribune* tells of the announcement of the wedding on June 21 of Miss Barbara Bullens and Robert Maclyn McCrae. David L. Babcock has been named assistant superintendent of Apparatus Research in the new apparatus department at Eastman Kodak, Rochester. He joined Kodak in 1934, has been chief engineer on professional equipment at camera works since 1949. Richard S. Morse, president of National Research Corporation, flew to Europe in September for a short visit. He spent some time in England and Germany examining European progress in new developments in petrochemical and metallurgical processes. Colonel Joseph Horridge recently visited the Mercedes-Benz automobile factory near Stuttgart, Germany, where he is stationed. The tour was sponsored by the Stuttgart German-American club to acquaint military personnel with German industry. The Mercedes-Benz plant was destroyed by bombing during World War II, but now employs 10,000 workers and turns out 125 cars per day. The Colonel said, "I was greatly impressed by the rapid recovery from war damage accomplished by the firm. The workmanship was of a high excellence throughout the plant." Edward W. Palmer was guest speaker at the first meeting of the Hardie P.T.A. Palmer is director of Health Services and Coordinator of Health Education throughout the Beverly Public School System in Beverly, Mass.

Donald G. Fink joined Philco Corporation, Philadelphia, in June as co-director of research operations. Don played a leading role in the development of television in the United States having served on the first National Television Systems Committee. Captain John E. Pixton, U.S.N. retired, has been named field engineering manager of the Washington zone office of Allison Division, General Motors Corporation. We recently learned that Joseph J. Dysart was recently named assistant chief project engineer for the DC6 and DC7 series of transports. He joined the Douglas organization in September, 1950, after spending 15 years with Pan American World airways. William L. Sheppard is an assistant to the vice-president of railway sales for the Budd Company, manufacturers of railroad equipment. Lieutenant Colonel William D. Murphy has been appointed chief of the planning branch, Engineer Division, Headquarters, European Command Communications Zone. Robert M. Kimball, has been elected a Trustee of Phillips Academy, Andover, Mass. Edwin R. Gilliland, President of Ionics, announced a new method of desalting sea water. The new method, developed by a scientific team headed by Dr. Juda, Vice-president of Ionics, is expected to produce fresh water from sea water at a cost of less than $.07 per 1,000 gallons. Robert H. Winters has been nominated by the Alumni Association to the Corporation for Alumni Term Member of the Departmental Visiting Committee for the Geology Department. He is Canadian Minister of Resources and Development. Lieutenant Colonel Leonard J. Julian is stationed in Germany where he is attached to an ordnance maintenance group at Esslingen. Robert J. Jackson has ben appointed Manufacturing Engineering Manager of Bigelow Sanford Carpet Company in Springfield, Mass. He has been associated with Bigelow since 1927 when he worked at the local plant during college vacation periods.

It is with regret that we learn of the passing of Harvey G. Schwarz in Seattle, Wash.

Frank Gilmore has been appointed to the faculty of the School of Business and Public Administration at Washington University. From 1945 to 1951 he was associate professor of business administration at Harvard University. Lieutenant Colonel George E. Hughes is serving with the United States Military Advisory Group (KMAG) to the Republic of Korea Army. His unit, the first American group to fight the Communists after the outbreak of hostilities in 1950, assists the Korean officers in training and organizing the ROK Army. It also familiarizes the ROK soldiers with American equipment and tactics. He is holder of the Bronze Star Medal with Oak Leaf Cluster and the Commendation Ribbon for meritorious service with the Seventh Division. Abner C. Hopkins, Jr., will direct commercial chemical development at the laboratories of General Mills. He will be in charge of market research and market evaluation of such products as polyamide resins, fatty acid amines and allyl starch, and will be responsible for cost and economic studies and chemical sales development. Frederick M. Cone has been appointed director of the Small Defense Plants Administration Office of Programs and Economic Analysis. He was formerly with the Office of Defense Mobilization. Lloyd H. Matson received the Army Bronze Star Medal with "V" device and first oak leaf cluster a few months ago.

Hugh W. MacDonald, Executive Director at Experimental Towing Tank in Hoboken, in a recent letter states they are overloaded with work and they are feeling the effects of the current shortage of well-trained manpower. He is interested in learning of any able, but idle, hands around – all he can offer is fair pay, hard but generally interesting work, and a chance to get your name on some scientific publication which, in four out of five cases, ends up classified. Hugh mentioned that he met Richard C. Molloy of United Aircraft Corporation, Hartford, Conn., while in Atlanta last summer. During 1950 and 1951 Hugh was assigned to police action in Korea attached to the headquarters of the Eighth Army, as an operational analyst. We have a very recent letter from Brigadier General William E. Potter who writes, "I was assigned in July, 1952, as Division Engineer of the Missouri River Division, with headquarters in Omaha. This is a most interesting and challenging assignment since this Division, which comprises an area of over 500,000 square miles, has under way one of the largest flood control and river development programs in the nation. In addition to those civil works activities, it accomplishes military construction for both the Army and the Air Force, within a 10-state area."

V. Lawrence Parsegian, Director of the Research Division, New York Operations Office, United States Atomic Energy Commission, was guest speaker on January 7 at the Rotary Club at Naugatuck, Conn.

We were indeed sorry to learn of the passing of Walter H. Benker on January 14 in Boston.

Bob Kimball had a note from Victor N. Jaffe reading in part as follows, "I received a D.D.S. degree from Georgetown University and have practiced here in Washington since 1935. There have been some interruptions such as a three-year stint in the Navy Dental Corps and one year at Warm Spring, Georgia, recovering from poliomyelitis. For the past few years I have appeared as a clinician and essayist before numerous dental societies throughout the country. It may be of some small interest to note that I have been invited to demonstrate my technique on Full Denture construction before the Eleventh International Congress of Dentistry in London in July of this

year. This, together with a busy practice, keeps me stepping." Colonel John D. Billingsley has been assigned professor of Ordnance, United States Military Academy, West Point. We had a card from Frank Coyle telling us of his new home in Kingston, N. Y.

Richard M. Armstrong operates his own company in West Chester, Pennsylvania, making chemical and process plant shell and tube heat exchangers. Charley Cashman is now living in his new home in Fitchburg. He is chemical engineer with Crocker, Burbank and Company. Frank Koerner's recent card tells of his new home in West Covina, Calif., which he says, "is very much country,—orange groves, walnuts, truck gardens, dairies and the darndest variety of livestock you ever saw." He is only 45 minutes from skiing country, Mount Baldy—and a short distance from the ocean and desert—variety plus!

That's all for now except—don't forget—get that reunion reservation in now! —GEORGE HENNING, *General Secretary,* Belmont Smelting and Refining Works, Inc., 330 Belmont Avenue, Brooklyn 7, N.Y. ROBERT M. KIMBALL, *Assistant Secretary,* Room 24-105, M.I.T., Cambridge 39, Mass.

• 1937 •

Last Sunday we visted George Ewald and his family in nearby Summit. We certainly had a grand time recalling old times and the fun at the Weekapaug Reunion. George and Eleanor have two very fine children—a son, nine, and a daughter, seven. George commutes each day to mid-Manhattan where he is executive vice-president of Martin, Inc., textile manufacturers. The development of new products, their introduction and maintaining sales, production, and so on, makes him a busy fellow. Walt Blake is back with Pillsbury Mills after his tour with the Ordnance Department at White Sands. You may get a card from him since he has offered to drum up some business from you fellows via the post card route.

I see by the papers that Frank Goddard has registered for graduate work in Aeronautics. How about it, Frank,—what's the story? Also, that J. Edward Lynn, for the past 10 years director of the Stamford, Conn., textile chemical laboratories of the American Cyanamid Company, has resigned to become director of basic research for the National Gypsum Company in Buffalo, N.Y.

Jim Pearce, who has gone into the "specialized engineering work" of patent law writes: "I was sorry to miss the 15th reunion last summer but was unable to get away. However, I heard all about it from Ralph Chapin who was there with his wife. Ralph and Sanna were in Cincinnati about a year ago and told me what a wonderful time they had. Sanna is now the friend for life of my daughter, Paula. Sanna asked Paula if she would like to have a little kitten for her birthday, and Paula said 'yes.' A few days later, a little white kitten arrived from the Chapins. However, the kitten is now a white cat and is Paula's favorite playmate. Harry Sommer was in Cincinnati last summer with all four children. You may know that Harry is located in the San Francisco area. He and his family were making an extended trip through the east for the first time in several years. Harry and Ralph are married to two sisters—two of the sweetest girls you ever met. There are a number of M.I.T. fellows in Cincinnati but not many from '37. I see Dan O'Conner every now and then. He is executive vice-president of Formica here. Dan is the only one from '37 who I know is presently located in Cincinnati. If there are any others around, I should very much like to know about them so that they can be invited to the M.I.T. Club here. As for myself, I have veered away from engineering as such, and am trying to practice patent law. I am married and have two youngsters who are rapidly getting big enough to tear me into little pieces. If any of the '37 gang get to Cincinnati, I hope they will look me up. In particular, if anyone is in Cincinnati on a Tuesday at lunch time, there is a standing invitation to join the M.I.T. Club of Cincinnati for luncheon at the Hotel Gibson. This invitation is for anyone with M.I.T. connections or interests."

Richard Surbeck, a U.S.A.F. Colonel, is with the United States European Command (A.P.O. 128, care of Postmaster, New York City) from his former post in Weisbaden, Germany. The Gilbert C. Motts are proud parents of a daughter, Elizabeth Culver, born February 7, 1953. —WINTHROP A. JOHNS, *Secretary,* 34 Mali Drive, North Plainfield, N.J.

• 1938 •

We're always glad to hear the good news when one of the gang gets a promotion. This time it's Jack Bethel who has been made a partner in the firm of Metcalf and Eddy. Jack has been a member of the company for sometime, and occasionally we get a chance to see him at meetings of the Alumni Council.

We have a letter from Dave Morse with similar news: "I had been with David Abrahams and Associates, Architects, for some five years, until July of 1950 when I left to go with the Architectural-Engineering Division of Anderson-Nichols and Company, in Boston. In September, I was admitted to partnership in the firm. We've done some very interesting work—to mention a few—schools in Framingham, Natick, Quincy, Hamilton; a factory and office building for the Norton Company, in Worcester; a press forging plant for the Wyman-Gordon Company, in Grafton. In April of '51, we had a second girl, Carolyn Julie. I'm the typical modernist in architecture who lives in a 25-year-old 'Cape Cod' house in a typical suburb—occasional ski week ends—normal Williams commuter existence. My only revolt is—at present proposed—a modern camp to be built soon on Cape Cod."

Chauncey Bell writes: "Moved in December to 300 Somerset Road, Baltimore, Md.,—big old house with room for boys, eight and five, girl, three, and dog!! Still at Glenn L. Martin and enjoying the work. I see few '38 men—many '37." From Dave Baker we hear: "Unfortunately will not be present June 13. First, Jean, Judy (5 years), and I moved across the street last July to 3909 North Delaware Street. I am still happily employed at Hugh J. Baker and Company, steel fabricators and building material distributors in Indianapolis. Postage stamp collecting is my hobby, particularly letters having to do with the growth of the west 100 years ago. I am not a good M.I.T. alumnus, attending their meetings infrequently. I do walk on the M.I.T. campus about once a year, usually in October. Since I am constantly surrounded by Purdue, Ohio State and Illinois men, I have to fight an up-hill battle! Hope you and the rest of our classmates have a bang-up reunion next June."

Ira Lohman is: "Sorry I've been such a poor correspondent of late. We're building a house, and that has kept me very busy for the last five months. We're scheduled to move in by March 15, 1953. By March 15, 1953 I hope to have lawn, painting, storm windows, and so on, in shape so that I can take a few minutes out for a letter. Will play hooky long enough to attend reunion in June of this year." George Morel writes: "I'm married—two children—have lived in St. Louis for past 10 years—am employed by American Brake Shoe Company as plant engineer for their National Bearing Division and must travel rather extensively on my job so I'm kept on the jump. Re Class Reunion—My folks will celebrate their golden wedding anniversary on July 28 at Andover, Mass., and naturally I wouldn't miss this, so it will be impossible for me to be in Massachusetts in June and again in July—C'est la guerre. Sorry I'll miss the reunion—had looked forward to it."

Tenney Clough writes: "Presently employed as plant engineer with Keller Products Inc., Manchester, N.H. Company manufactures molded plywood and reinforced plastics for the aircraft, electronic, furniture and transportation industries. Have two boys, ages, five and one, and one girl—my wife. Talking to Fred Schmitt in September and we are planning to attend 15th reunion in June. Have not seen any other '38 men in years." —ALBERT O. WILSON, *General Secretary,* 24 Bennington Road, Lexington 73, Mass. *Assistant Secretaries:* DAVID E. ACKER, 210 Woburn Street, Lexington 73, Mass.; Frederick J. Kolb, Jr., 211 Oak Ridge Drive, Rochester 12, N.Y.; Richard Muther, 116 West 67th Terrace, Kansas City, Mo.

• 1940 •

Our apologies to Colonel Haywood for the gremlins who got into the January column and garbled the report on his series of lectures on the Von Neumann theory of games and its correlation with the military doctrine of decision.

Please note the new address of your Secretary, 7814 Marion Lane, Bethesda 14, Md. I haven't moved, but Montgomery County has decided to renumber all streets according to a new systematic plan. As Marion Lane is just one block long, the logic behind the plan is not too clear.

JoJo Wiley is in charge of the new Hummel Technical Products division of the Hummel Chemical Company. The

new division handles sales of tube fittings, flexible hose, "O" rings, pressure gages, valves, hydraulic pumps and air and oil cylinders. Good luck JoJo in your new undertaking, and how about a letter with more details on your activities? Ed Harris has joined the engineering staff of the Norden Laboratories Corporation in White Plains, N.Y. Since graduating from Technology, Ed has spent his entire professional career on the design and development of electronic and precision control equipment. Prior to joining Norden, Ed worked for the Submarine Signal Company, Glenn L. Martin Company, and Chance Vought Aircraft.

Louis Michelson, who is technical director of the Research and Development Department of the Naval Torpedo Station at Newport, R.I., recently received a superior accomplishment step pay increase for an outstanding performance rating. Less than 0.1 per cent of all government workers receive an outstanding rating, so congratulations are indeed in order for Louis. Colonel Frederick G. Crabb, Jr., has been named commanding officer at the Mount Rainier Ordnance Depot. Previously Fred was chief of Ordnance in Washington, D.C. J. Herschel Fisher has been elected president of the Dallas chapter of the American Institute of Architects.

Again a reminder to send your class dues ($2.50 for five years) and news to Al. The Alumni Office each month gives your Secretary the names and addresses of classmates who have changed their address in that month. If you would like to see the list in The Review, how about dropping a line to your Secretary? — ALVIN GUTTAG, *General Secretary*, 7814 Marion Lane, Bethesda 14, Md. MARSHALL D. MCCUEN, *Assistant Secretary*, Oldsmobile Division, General Motors Corporation, Lansing 21, Mich.

• 1941 •

John Murdock has sent a letter containing several interesting news items, the bulk of which goes as follows: "The Perlite Corporation, Lansdowne, Pa., is wholly owned and operated by members of the Class of 1941, namely Herb Stein and myself. We developed a process for expanding volcanic glass with heat into an insulation material and for the past four years we have been putting up perlite processing plants. We have just finished our twentieth one. We have them all over the United States, one in Canada, and one in Italy. Herb finished the plant in Montreal in December, and I finished the one in Milan, Italy, in November. While over there I also visited Sardinia to help them with their mine and mill for the raw material. They have a very good deposit of this material and they hope to open up a perlite industry in Europe. If they do, we will be able to build a good many plants there. Every time I go by College Park, Md., I find that Bill Ahrendt, President and owner of Ahrendt Instruments Corporation, has added a new wing to his plant. He now has over 100 people working there, and there is so much work going on that it is coming out the windows. The government won't even let him tell us what he is making (Fred Haddock is still with the Navy radar Laboratories in Washington. Not long ago he took a big crew off to Africa to watch an eclipse through a radar receiver. He is now one of our leading radio astronomers."

Jim Thornton also provided a good story on his doings, from which I am glad to quote freely: "In case you need some space fillers for the '41 class notes, I thought I'd tell you about my move to the West Coast. Next Monday, February 2, I start driving to Portland, Oregon, where I will go in business as a manufacturer's representative for some machinery builders. Pulp and paper mill machinery plus paper and plastic converting equipment will be the sources of bread and butter at the start. My route will go via New Orleans. The excuse is that I want to go far enough south to avoid any snow driving. The truth of the matter is that I have never been to New Orleans, and now is as good a chance as any to see the famous village. I've seen quite a few '41 men recently. John Anderson, Ray Berry, Howie Morrison, Johnny Sexton, Bill Hooper, plus wives, and I had a good week end in New Hampshire. On New Year's Day, I visited Johnny Murdock and Herb Stein. I was living in Bryn Mawr at the time, and they were near neighbors. Like all the rest who have seen the light and moved to the West Coast, I have become a one-man chamber of commerce for the area, especially the Pacific Northwest. One hour from Portland you have Mount Hood, and good skiing through July. An hour or so in the other direction, and you have Pacific Ocean swimming. Shall I go on? Hope to see lots of M.I.T. travelers out there soon. Temporarily, my address will be care of J. V. Roslund, 244 Pacific Building, Portland, Oregon." Jim had been with the Downingtown Manufacturing Company, and I know we all wish him the best of luck in his new venture. Thank you both, John and Jim, for writing; I'm sure the rest of the Class is interested in your stories, and, for my part, I really appreciate having live material to put in the column. John put it very aptly by saying, "We all hate to write about ourselves, but we do like to read the news about others in the Class, and for that to be possible we've got to let the information out."

George Newton, Jr., now Associate Professor of Electrical Engineering at Tech, had an article published entitled "Compensation of Feedback-control Systems Subject to Saturation" in the October and November, 1952, issues of the *Journal of the Franklin Institute*. The article was abstracted from George's doctorate thesis. The basic problem of dealing with saturation in these systems has often come up in his work in the automatic control field. A partial solution was obtained during work for the Fairchild Guided Missile Division, and the more general solution outlined in the paper was obtained during research done in the Servomechanisms Laboratory at Tech under Air Force contract. — Rogers Finch spoke at a meeting of the M.I.T. Club of the Connecticut Valley in Springfield in January. He said he felt that through engineering development, the manufacture of textiles has changed from an art to a science in the past 10 years. He said further it appeared that the old one-fabric mills, producing only woolens or cottons, will eventually be relpaced by plants which have the ability to blend textiles to make stronger cloth, and by plants making use of modernized manufacturing processes. — The board of managers of Sturdy Memorial Hospital in Attleboro, Mass., has announced the naming of Dr. Henry Auerbach to the staff. Henry, who received his M.D. from Tufts in 1950 and served internships and residency at Rhode Island Hospital, Charles V. Chapin Hospital, and Providence Lying-in Hospital, at present operates Farmer's Clinic in Attleboro.

Joseph S. Finger, who received his bachelor's degree in chemical engineering from Rice University in 1939, and his master's in business administration from M.I.T. in 1941, has been appointed general manager of Libbey-Owens Ford Glass Company's new Corrulux Division at Houston. After leaving Technology, he was associated with Pan-American Refining Company, Texas City, and then with J. S. Abercrombie Company at Houston for two years. In 1945 he entered the plastics industry as vice-president of Macrolyn, Inc., and in 1948, he became president of Corrulux Corporation, which recently sold its business to Libbey-Owens Ford. He was cited for service on two aviation gasoline technical committees during the war, and is a member of Tau Beta Pi and Phi Lambda Upsilon. Last year he was chairman of the preparedness committee of the reinforced plastics section of the Society of the Plastics Industry, and a member of the advisory committee on plastics of the Army Engineers. — Brigadier General Leighton I. Davis addressed members of the Cleveland-Akron section of the Institute of Aeronautical Sciences at a dinner meeting last fall. He spoke on the factors and engineering problems involved in achieving an effective air weapon system. General Davis, who is director of armament at the Air Research and Development Command, Baltimore, graduated from West Point in 1935, received his master's degree in aeronautical engineering from Technology in 1941, and later graduated from the Air War College at Maxwell Air Force Base, Montgomery, Ala. — Major Holbrook A. Bourne, personnel officer of the 43rd Infantry National Guard Division, was recently promoted to lieutenant colonel. He graduated from Rhode Island State College and from M.I.T. in 1941, and is a public health engineer for the city of Hartford, Conn. He is married and has three children.

The engagement of Esther M. Coffin to Arthur F. Martin has been announced. Miss Coffin holds a bachelor of science degree from the University of Massachusetts and a master's degree from Mount Holyoke; Dr. Martin received his bachelor's degree from Ursinus College and his doctorate from Technology. Both are with the Hercules Powder Company, Wilmington, Del. — IVOR W. COLLINS, *General Secretary*, 28 Sherman Road, Greenwood, Mass. JOHAN M. ANDERSEN, *Assistant Secretary*, Saddle Hill Farm, Hopkinton, Mass.

• 1943 •

Your Acting Secretary is highly pleased with the wonderful influx of news for this month's issue of the class notes. To start off, here's a fine letter from Jim Spitz, Jr.: "It was good to hear from you. I've been somewhat out of touch with Tech recently; in fact, haven't even gotten around to paying my alumni dues yet. (That's bad, Jim. – Ed.) However, I figure anybody who troubles to write to all his classmates deserves a reply!

"In response to your request, the following is a capsule history of Spitz in the last 10 years – needless to say, I enjoy talking about myself. Went on active duty as a naval officer two months after graduation and spent the next three and one half years in that occupation, as an aviation ordnance technical specialist. My stint included 19 months in the Pacific – Guadalcanal, Guam, Saipan, Okinawa, and other nasty places.

"In the fall of 1946 I went to work with Newport Industries, Inc. at its Pensacola main office, as a chemical engineer. We're in the naval stores and synthetic organic chemicals business, with plants in Florida, Louisiana, and Alabama. After a couple of years of plant engineering and construction supervision, have settled down as project engineer on new plant design.

"In February of 1948 I married the former Elizabeth Taylor Parks, a southern gal with a Yankee education. We now have two children – William Taylor, 21 months, and Elizabeth Seymour, six weeks. In addition to these possessions, I also own a house, a Ford, a cocker spaniel, an alley cat, and a bag of golf clubs. Interests – strictly middle-class martinis, golf, bridge, and gardening, in that order. Have also gotten fairly well tangled in the local civic affairs, the most recent effort being a monumentally strenuous one for the local Community Chest. . . .

"That covers the situation – admittedly far from sensational. This company is well stocked with Tech men, and there are quite a few others in Pensacola, but none of '43 vintage. The nearest class representative is Filo Turner'42, who graduated in aeronautical engineering and now sells Chevrolets at his father's Pensacola buggy works. Betty and I put in over a year at one of our Louisiana plants and spent one very pleasant week end as the guests of Harry Ottinger and his delightful wife in Baton Rouge. Harry is, of course, with Esso. Don't know whether we'll make the 10th or not, but will look forward to seeing you if we do. . . ."

And from Toledo, Ohio, we have this letter from George Musgrave: "Am now controls manager for Rexair Division of Martin-Parry Corporation here in Toledo. Budget controls, rents and leases for our branch offices, organization and policy control. Fascinating work, though the engineering portion of Course XV doesn't apply to my work. Married, with two children, Nancy, three, and Patricia, one, both blue-eyed blondes like my wife, Mary. Hope to make the reunion."

One happy day in January, I received four letters, all written on January 23. First, from Stanley Proctor, who lives in Warrensville Heights, Ohio: "Thanks for your card and congratulations to you on your new job as Acting Secretary for our Class. . . .

"I don't know how much to tell you about myself except that after leaving the Army, I went to work for General Electric Company and was ultimately transferred to Cleveland as a district lighting specialist. After about two years of traveling about the country for General Electric, I decided there must be an easier way of getting rich, so I went to work for a small company as a manufacturer's representative handling a complete line of hydraulic accessory equipments. I am now in charge of their Cleveland Office.

"In addition to my business activities, I teach several courses in marketing at Western Reserve University. Cleveland is a wonderful city. We built a house recently and feel pretty much like native Clevelanders. I expect that my son John will be a freshman at M.I..T about 1970, which will be the third generation from my family. However, he will probably elect to go to Harvard instead. My wife and I plan to be back to school for our 10th reunion. I will look forward to seeing you."

On the same day, Howard Bollinger wrote: "Your post card requesting some news for the class notes finally reached me after a tortuous route through various previous addresses, and it sounded like a good idea to me, so here goes.

"After leaving the Navy in 1946, I went through Harvard Business School, and from there took a job with a consulting engineering firm in Washington, D.C., where we were working on guided missiles for the Navy. Having a few free evenings a week, I started to go to law school at night, and finally got interested in it and got my degree last February. From there, the step into patent law was a natural, and I'm now associated with the law firm of Curtis, Morris and Safford, here in New York City.

"Oh yes, along the way, I met the kid sister of Hughie Pastoriza, Jr., (M.I.T.'43), and married her in 1951. We two, and five-month-old Ann, are enjoying life in an apartment in Tuckahoe, N.Y., and are spending week ends looking for a reasonably priced house – if there is such a thing. Just at the moment, however, there isn't too much time, since I'm boning up for the New York State Bar Exam which is a month away."

In his absence from this country, Milton E. Borden, Jr.'s father wrote this about our far-traveling classmate: "My son has been over in Europe since early last March. He landed in Rotterdam and has really been seeing Europe. After a month in The Netherlands he headed south through France, Germany and into Italy. Then he retraced his way northwards to Denmark, and thence over to Finland, where he took in the Olympic Games in the latter part of July. Then he proceeded to Sweden, thence to Norway, back through Denmark to Holland again. From there he took passage to England where he spent the Christmas Holidays. Currently he is in Scotland, but our latest letter indicated that within a couple of weeks he would return to London. . . .

"Inasmuch as he couldn't reply to your card, I just thought that I should let you know why no word was forthcoming from him." Your reporter sincerely thanks Mr. Borden for his fine letter.

The fourth letter I received on that epochal day was from Harold Selleck of Boca Raton, Fla., who sent me some fascinating literature about the product which he designs and manufactures there, which is described in his writings:

"Upon graduating I went west and spent a year in Richmond, Calif., at Kaiser Shipyard No. 3, where I had the pleasure of being one of eight Tech graduates of Course XIII or XIII-C who were department heads in the Office of the Naval Architect there. . . .

"The following year found me further west, at Pearl Harbor as a civilian employee of the Navy, and the next two years I spent in the Navy itself, moving about the United States from coast to coast and finishing that tour of duty at the Navy Department in the Office of Research and Invention, Washington, D.C., as an advisor on technical naval and nautical terms covering just about every field of science and engineering. I married a fine young lady from Rochester, N.Y., during that time, and today we are a family of four evenly divided as to sex. The youngsters are six and four years of age at this time.

"Upon discharge from the service I returned to my home town of New London, Conn., and Dad and I put our heads together on an idea which had been in our minds for some time. It was in my field of marine transportation all right, but dealt with small 'ships' rather than large ones. This idea proved practical after some two years of experimental work and has since been the source of our bread and butter.

"Our aim was to develop a small craft, manually propelled, which would be a real pleasure to handle on the water through its ease of operation and safety. We felt there was much pleasure in boating being missed by the greater majority of people because the common types available, the rowboat, the sailboat, and the canoe, each have one or more basic drawbacks. . . .

"The variety of experimental craft we designed, and built, and tested boiled the possibilities down to a single one, and it is this foot-propelled paddlewheel-driven twin-pontoon craft we named a 'Watercycle' that we have been building and selling and continually improving ever since. It has proved itself the answer to the kind of boat we were seeking. . . .

"Today we build craft that rank with the best; they're fit for a king, and we have the proof in the sale made in 1951 of two Watercycles to His Royal Majesty, King of Egypt, (former King Farouk) for his personal use. . . .

"I had hoped to be in on the occasion of our 10th reunion but with our recent move to Boca Raton here in Florida, lock, stock, and barrel, it doesn't look as though I'll be through getting ourselves set up down here in time. So I will very much appreciate your saying 'Hello' for me in the class notes. . . ."

Here's a letter from Bill Selke, who writes from Columbia University in New York: "It probably has been several years

since I sent any news for the class notes, so I should bring you up to date with what little has happened. I am teaching chemical engineering at Columbia. In October of '52, I married Martha Whitney Floyd, a Garland School graduate, from Pittsfield, Mass. We have moved to the suburbs, Cresskill, N.J. I fear that I will be unable to get to the reunion because we will be on a rather belated honeymoon in Europe at that time. . . ."

And from Ray Hahn's office at 300 Madison Avenue, N.Y., we have this letter: "Haven't seen much of the old gang since our 5th reunion, but have enjoyed reading our class notes about those whose activities have been more newsworthy than mine. There has not been much change in my status in the past five years; am still a bachelor, but not a confirmed one; am still with Union Carbide and Carbon in the Chemicals Works Manager's Department, and the only possible news value I can see in this is that I still enjoy the work as much as ever. Am looking forward to seeing the whole gang in June."

We have the following news item about one of the Coast Guard officers who received master's degrees with our Class: "Completing a 24-month tour of sea duty, Commander Charles E. Columbus will be relieved as commanding officer of the Coast Guard cutter *Mackinac* to join the engineering staff at the Coast Guard Yard, Curtis Bay, Md. A 1935 graduate of the Coast Guard Academy, Commander Columbus served initially aboard the cutter *Mojave,* then the cutter *Mendota* and training ship *American Seaman.* He was next assigned to Norfolk as district engineering officer. He attended M.I.T. for three years, receiving a master's degree in marine engineering.

"Commander Columbus next went to Long Beach, Calif., assigned to construction and commissioning of the Coast Guard icebreaker *Southwind.* He then served aboard the troop transport *Monticello,* the former Italian liner *Conte Grande.* From 1946 until 1950, he was stationed in the New York district office where he headed the marine engineering section. Prior to his present assignment, he was executive officer aboard the cutter *Campbell.* In 1935, he married the former Helen Rogers, of New London, Conn. They have a daughter, Carol, age nine."

Sam Maloof was the feature of an article which appeared in the Springfield, Mass., *Democrat* last December.

Good news about Hans Haac, from the Cleveland, Ohio, *Plain Dealer:* "Mr. and Mrs. Daniel P. Shaw, Shaker Heights, announce the engagement of their daughter, Dorothy Patricia, to Hans J. Haac, son of Mr. and Mrs. Oscar E. Haac, Forest Hills, N.Y. Miss Shaw was graduated from Duke, where she belonged to Alpha Phi. Her fiance received his undergraduate degree from M.I.T. and his master's degree from Columbia. An Army veteran of World War II, Mr. Haac is living at the University Club in Wilmington, Del. A spring wedding is planned."

Jim Hoey, Reunion Chairman, sent this item from the Boston *Herald:* "Ralph E. Leader has been appointed Northeastern District manager for Bendix TV and Radio." Ralph lives in Needham, Mass.; when I was in that area last year, I heard that he and his wife have three children now.

There are about a dozen other items which recently came in via Dick Childerhose, but I am going to save these for next month's notes. The May issue will carry the last big reminder about the reunion, so watch for it. In the meantime, Prexy Childerhose reports that the curve of class dues receipts vs. time is asymptotically approaching some kind of ordinate. Fifty cents a year for the past 10 years is mighty small, so how about it, you fellows who have fogotten up to now? To those of you who have responded, the Bank Account hollers its thanks.

Chairman Hoey called me the other day, and told me that the response to the first reunion mailing was very good, but he was puzzled at not hearing from a big bunch of fellows who are regulars at the June reunions. Come on, men, mail in the cards! And as for news for these notes, I'm sure that the many letters which you have just read will inspire you to write, too. — RICHARD M. FEINGOLD, *Acting Secretary,* 49 Pearl Street, Hartford 3, Conn.

• 1945 •

My most humble apologies for not making the March deadline date. We received a very long letter in early January from Steve Eppner aboard the *U.S.S. Tripoli* (CVE-64) which we quote in part: "I've been on the *Tripoli* since being recalled and since the big brass in Bureau of Personnel recently notified the ship that I was to replace the communications officer, it looks like I'll stay here until I get out. Right now, I'm still holding down the job of personnel officer and aide to the executive and general assistant . . . which was a logical assignment since I was executive officer of a reserve unit prior to recall. The ship is assigned to the Military Sea Transportation Service, Atlantic area, and we've been carrying planes over to NATO countries in Europe. However, we've just returned from a five-month tour in the Pacific doing a little hauling to Japan. I'm certainly seeing the world, as per advertisements; in 10 months of operation, we've logged 70,000 miles and have been to Portugal, Italy, Denmark, Germany, Panama, Japan, Hawaii, and several stops in California.

"The one thing that surprised me was that in all my travels from port to port, I've never seen a fellow Tech man, although all the other boys would be holding V-12 reunions in every officer's club we hit. Now after reading class notes, I see the answer: All the Tech sailors grabbed off the shore duty billets while I was sitting around worrying if they were going to call me. . . .

Well, at least I am on a ship with New York as a home port, which means that when we get into port for a few days, I'm right at home." Steve and Evelyn celebrated their fourth wedding anniversary last December. Congratulations! Steve also reports that Lieutenant Larry King and his wife, Florence, as well as their twin boys, have been down at the Key West Naval Base for the past 18 months. Thanks for a swell letter, Steve.

By the time this issue reaches you, I will have completed about 20 months of active duty at the Portsmouth Naval Shipyard as an assistant planning and estimating superintendent in charge of submarine repairs, and will have returned to that glorious civilian status with my old employer, Firemen's Mutual Insurance Company, as a field engineer working from the New York office. I have no idea where Frannie and I will be living but trust that we will not be pounding the Manhattan pavements. Before leaving the subject of the Navy, it is great to note that Jerry Patterson, after two years in the Pacific area, has returned to Binghamton, N.Y., and, we imagine, to the Binghamton Iron Works, his old employer. On the other side of the fence, we were sorry to learn that Dave Cohen has joined the "happy" ranks of the lieutenants.

On the behalf of Prexy Chick Street and the whole Class, it is a pleasure to welcome to the fold of '45 Walt Kulesa of Turners Falls, Mass., Bob Hallock, now in Santurce, Puerto Rico, and Sam DiSavino of Weymouth. As you may recall, Walt was one of our class officers in our freshman and sophomore years. As V-12 men we all remember Sam as Company Two Commander, and I guess Bob Hallock's greatest bid for fame was his ability to withstand the bull that used to flow from his V-12 roommates, Frank Pohanka, Jr., 10-44, and our fellow classmate, George B. Hetrick, Armstrong Cork's super Detroit salesman.

Via the Christmas card, change of address slips, and The Review news clipping services, we have the following tidbits: Buzzo Busby reports from Okmulgee, Okla., that he is still operating as an independent consulting geologist with the hope of joining a large outfit in the near future as their geologist. Tom Stephenson, after a considerable time outside the States, is now at Alcoa's big aluminum reduction plant in Benton, Ark. Jeptha and Emily Wade are still in the Boston area, and are now residing in Bedford, Mass. Ned Bowman'47, who is now at the Institute as an instructor in the School of Industrial Management, reports that he saw Red Harrington in Filene's basement at Christmas time. Red is still with Shell Oil now managing a bulk plant in Toledo, Ohio. Robert E. Welch and Carolyn Kempf Owens were married on December 27 in St. John's Church in Utica, N.Y. After what we know was a wonderful wedding trip to Mexico, Bob and Carolyn made their residence in their home town of Utica. Another marriage to report is that of Marion Louise Snee to Thomas A. Wood in White Plains, N.Y., last November. Tom was with the Combat Engineers during the latter part of World War II, and, after instructing at the Institute in '49 and '50, he is now with George A. Fuller Company in New York.

Bob Wiegand has moved from Homewood, Ill., to Woodside, Long Island. We have no idea what you are doing, Bob, so how about dropping us a line? Bob's V-12 roommate, Ray Elmendorf, is now in Westfield, N.J. We imagine Ray is still with one of the numerous oil companies located in the New Jersey mosquito flats. Bob Maglathlin, who is with Boston's

Laboratory for Electronics, has transferred his allegiance from the South Shore to Marblehead on the North Shore. J. Spencer Standish is now located up in cold Cowansville, Quebec. The November 30 edition of the Worcester, Mass., Sunday *Telegram* paid a tribute to Dr. Francis L. Cassidy and his dentist sons. His oldest son, Francis P., is one of our illustrious classmates. After a splurge in V-12 and V-5, Fran entered Tufts Dental School, graduating in 1949. Fran, who is now a captain in the Army, lives with his wife and son, Neal, at Fort Eustace, Va. Speaking of children, our January rumor was correct: Prexy Chick and Helen-Marie Street announced on their Christmas cards the birth of Sara Curtis Street on December 13, 1952, in Providence, R.I.

It is a pleasure to devote a few lines to recent letters received from your Assistant Secretaries, Ed Stoltz and Bill McKay. Ed wrote on the first of December that he had recently attended an M.I.T. Club of Western Pennsylvania dinner dance in Pittsburgh, when he and Elinor ran across Al Oxenham and his wife. Needless to say, Al and his wife kept the group well entertained with lively anecdotes concerning their old residence in Levittown, Long Island. Al is now in Coraopolis, a suburb of Pittsburgh, where, as Ed Stoltz says, "sunlight shines." Al is with Pittsburgh Coke and Chemical Company doing product research which entails promotion of special products – just another traveling salesman! Early last fall, Ed ran into Jim Hardigg, who is chief engineer for Penn-Metal Manufacturing Company in Vienna, W.Va., which manufactures expanded metal products. Ed complained that Jim didn't buy any of his fine Johns-Manville product. The Wheeling, W.Va., correspondent also reports that Jerry Woolf is selling for Stoker Engineering Company of Parkersburg, W.Va.

Naturally Bill McKay spent considerable time growling about Navy life at Pensacola Naval Air Station, but when one stops to think about it, he has no growls for almost any one but Bill would enjoy working shifts three days at a time with three big days off after the gruelling nine. Bill is now assistant communications officer and anxiously awaits "out" on June 1 which means he will be on hand for our eighth reunion this June. On this subject Bill says, and I quote, "If above R.A.D. date for me holds, it means that I shall be able to attend the reunion this year. I have really missed the last two, and it will be good to get together with all you Tech men again. Believe we should try to get as many as possible this year, since we shall have to get something started on the 10th reunion. We should make this one (the 10th) a real show, Clint, since we are now all rich and famous." Do you concur? We hope so! Bill reports that the status quo of Andy Marocchi and Max Ruehrmund is the same; I can't remember what Andy is doing, but the last I knew, Maxie was selling cocoanuts for General Foods. Bill managed to get up to the Cape for a summer vacation last year, where he got together with Bill Meade, Ray Pelley of Procter and Gamble, and Bob Maglathlin. Bill recently sold his home in Needham, Mass., for he claims his family had outgrown it.

A hearty thank you and well done for every one that has contributed to these class notes. See you in June! – CLINTON H. SPRINGER, *Secretary,* Firemen's Mutual Insurance Company, Room 2140, Graybar Building, 540 Lexington Avenue, New York, N.Y. *Assistant Secretaries:* WILLIAM J. MCKAY, 409 Greve Road, Warrington, Fla. EDWARD STOLTZ, JR., Hubbard Lane, Wheeling, W.Va.

• 1947 •

I rather hate to let more than two months go by without at least some mention of '47 in The Review, so just to keep the record clear, here are a few brief notes. News is very scanty, and even the indefatigable clipping services, an old reliable source of information, have let us down. But we'll keep the show on the road somehow. Late in January I attended the annual midwinter meetings in New York of the Institute of the Aeronautical Sciences with Howard Zwemer, and spent a good part of the sessions with Fred Ehrich, who is with Westinghouse Gas Turbine Division in Philadelphia. Fred's erudite paper on jets oblique to a general stream appeared in the February issue of the *Journal of the Aeronautical Sciences.* Dick Scheuing attended the meetings for one day as a representative of Grumman Aircraft.

Even the Alumni Meeting at Walker Memorial early in February proved disappointing from the standpoint of the small number of classmates attending. Incidentally, more of you should try to make these midwinter meetings, as they are informative and vastly entertaining, aside from affording an opportunity to see old classmates. Jack Rizika was at the 1947 table, and discoursed at length on the book he is writing on the Russian aviation industry. Apparently the book is to be published shortly, so rush to your nearest library and steal a copy – autographed editions only $.25 extra. Jim Van Meter, now with the Transonic Control Project at Tech, was there; and Art Schwartz breezed in from New Jersey, spending a few days up here with Lee Schindel'45. I ran into Pete Portmann in the lobby after the meeting broke up. He had very recently arrived in Boston to take a position with Project Lincoln, and was busy househunting, before sending for wife, Bobbie, and the three children from Washington.

The professional tennis matches came to Boston in February, and while I normally wouldn't pay money to see the game, my chauvinism asserted itself, and off I went to see fellow Commonwealthers, Sedgman and McGregor. Dave Knodel and wife, Pat, left their baby daughter home with a sitter and came along, and Dan Fink'48, was also in the party. As luck would have it, Harry Lighthall was sitting in our row at the Garden, but the matches were far too engrossing to allow any reportorial conversation.

John Harvell is back on "civvy street" after two years as an engineering officer aboard a destroyer – actually, two destroyers. He was transferred from one ship to the other by breeches buoy in mid-ocean, and is here to tell the tale. I met John just four days after his separation. He has accepted a job with Arthur D. Little, Inc., and will be joined here shortly by his wife, Barbara, and two sons, John and Peter. In closing, the usual hopeless plea for word of yourselves. If you want to read these notes every so often, I must have something to write about – after all, I can't go on making this stuff up forever. And don't just "let George do it." – CLAUDE W. BRENNER, *General Secretary,* 1470 Beacon Street, Brookline 46, Mass.

• 1948 •

To say the news available for these notes was negligible is the understatement of the month; and in Goshen, Ind., where your wandering Secretary is writing this set, the facilities for getting or making news are severely limited. No write – no read. The assumption here is, of course, that you are all saving up the news to pass it along in person at our first big class reunion in June.

More men of '48 have trod the primrose path, or are planning to do so. Back in December, Dick Schotland was married to Jane Elizabeth Hinchcliffe. Dick is now an assistant professor at the New York University Graduate School of Engineering, after receiving his doctorate at the Institute. Fred Bird, who is currently with Arthur D. Little, Inc., in Cambridge, became engaged to Dorothy Heinrichs and is planning to be wed in June. Clark DuBois, now employed by the Brown Instrument Division of the Minneapolis-Honeywell Regulator Company in New York, is engaged to Constance Bristol, Gunnar Oleson, Jr., to Patricia Ann Freise; Bob Gale to Patricia Feit; and Phil Naber to Joan Haskell. Phil has recently been released from military service with Army Ordnance at the Aberdeen Proving Grounds in Maryland, and is now attending Northwestern University.

John Tillett, Jr., who has had extensive experience in textile sales and service since leaving Technology, has joined the Calco Chemical Division of American Cyanamid at its Charlotte, N.C., headquarters. In December, he was going through a period of laboratory training prior to being assigned a sales territory from the Charlotte office. And your Assistant Class Secretary, Dick Harris, has been appointed an instructor in the Management Training Program at Worcester Junior College. Dick teaches a course in controlling departmental costs, and is also employed in the Norton Company as a member of the controller's staff. For the benefit of those of you who are not familiar personally with Dick, he is also chairman of our Class Reunion Committee, a member of the American Management Association, the M.I.T. Alumni Council, and the Worcester County Mechanics Association. He is married and the father of two children. – WILLIAM R. ZIMMERMAN, care of A. T. Kearney and Company, 135 South La Salle Street, Chicago, Ill. RICHARD H. HARRIS, *Assistant Secretary,* 26 South Street, Grafton, Mass.

• 1950 •

Upon realizing how long it has been since news of '50 has appeared, even I was

surprised! However, during the past several months, the Air Force has seen fit to keep me away from this home away from home more than I've been here. As a matter of fact, I managed to spend time with Gerry Hirschfield while in Los Angeles several weeks ago. And then, a few weeks later met Djalma Lima and his wife at a theater in Paris. He was on leave from his position with the Brazilian Air Force's Electronic Laboratories. (I must confess that I too was on leave at that moment.)

But enough of this trivia and on to the reams about the wooings and doings of these last weeks. Wooings Department: Just received word of Irl Duling's engagement to Lois Linton of Philadelphia, announced last fall. Among those who've also taken this step since last we sat typing out these notes were: Edwin Field to Carolyn Eaton of Augusta, Me.; John Outwater, Jr., to Alice Davidson of N.Y.C.; David Hellstrom to Janet Wrede of Cleveland; Bob Haslam to Lois Gnong of Quincy (Bob's now working for United States Lines; Ensign Robert Hutton to Joan Bley of San Francisco; Don Gaver to Frances Rouse of Louisville (Don's with the Navy Department in Washington); Stener Rosenberg (working in Eugene, Ore.) to Joan Dysart of Seattle.

The list of those who have exchanged vows is further enlarged by the addition of the following blissful couples: John Nicholson to Josephine Hoefer; Ed Fox to Patricia Cass (Ed is stationed here at Wright-Patterson); John Carney to Susan Wiley; Don Walker to Lois Hormel on her parents 25th wedding anniversary date of January 6, 1953; Roger Smith to Barbara Lambert; William Webster to Ruth Ann Gremley; Bob Terry to Cynthia Barr (Bob is working for Bendix Radio in Baltimore); Captain Fred Grant to Joan Batten (Fred received his M.S. with '50); Fred Lorenzen to Barbara Newman (Fred is now on the faculty of the Manlius School, Manlius, N. Y.) Also received the news via letter to Jack Weaver forwarded from Germany to me that Jerry Lewis planned to get married December 23, 1952, to Betty Fried. Jerry writes that he is working for Sanderson and Porter, engineers and constructors of NYC after leaving Webb and Knapp last year.

In the Doings Department we have much news to report also. From Korea, representatives of the Class are doing much to hold down their end of things. Lieutenant Bob Whitney is filling the position of assistant ammunition officer in the Ordnance Section of IX Corps. Lieutenant Claus Manasse is also over there with the 25th Infantry Division. And serving as the motor officer of the Division's 65th Engineer Combat Battalion is First Lieutenant Jules Van Deun. From Germany comes news that Lieutenant John Litchfield has been assigned to the Berlin Military Post and that First Lieutenant Allan Tate is being returned to the States for release from active duty. Also received a note from Jack Weaver from Germany. He and Ruth seem to be having a grand time. When last heard from, he was giving instructions to the local populace on the art of drinking Jakie's Dark as practiced in Cambridge.

Guess Jack can't get devotion to this column out of his system, even after he temporarily handed me the job, for he sent the following news of 1950. The Dave Vollmers are expecting their second child. (Guess that by now we ought to be hearing from Dave on whether it was cigars or candy.) A boy born to the Walter Fales last October. Walt is working for Chrysler in Detroit. Dick Ahern, now back in Washington, D.C., received the degree of Doctor of Technical Sciences in Architecture from the Graz Institute in September, 1952, on the basis of his thesis "The Fundamentals of Architectural Design." Dick had been at Graz since graduation, interspersed with motorcycle trips around Europe and North Africa collecting material for his work.

Believe it or not, I still have a stack of clippings, but I'll save them for next month. But I've still to receive more than a smattering of letters from you telling of your doings. Let's hear from you before too much longer. And let's all help to put 1950 on top of this year's Alumni Fund Drive. Your check will clinch it! — MYLES SPECTOR, *Acting Secretary*, 3114 Sunny Crest Lane, Dayton 9, Ohio.

• 1952 •

It certainly looks as if the Class had a very busy Christmas vacation; I was just snowed under by the deluge of wedding and engagement announcements from the holiday season. Without further ado, here we go: Mildred Miller and Dave Curry were married on December 27 in Quincy, Mass. Dave is now a lieutenant in the Air Force and is stationed at Scott Air Force Base, Ill. Sheila Noonan and John Dahlen were also married on December 27; the place of the wedding was Framingham, Mass. John is a lieutenant in the Air Force stationed at Wright Patterson Field, Dayton, Ohio. Elizabeth Hayden and Arnie Erickson were wed in Fall River, Mass., on December 29.

An engagement reported in last month's Review ended quickly in the marriage of Libby Agate to Burge Jamieson in the early part of January in Newark, N.J. The couple is now living in Merrick, Long Island, while Burge is working for Grumman Aircraft in nearby Bethpage. Gertrude Garrett and Tom Kennedy were married in Dallas, Texas, on December 29. Tom is now a lieutenant in the Army. Going back a bit further, on November 15, Lucille Trudeau was married to Bill Levin. I'm sure you all remember Bill; he's a major in the Quartermaster Corps who was teaching us R.O.T.C. courses, and suddenly decided to join the student ranks for a while. Bill is now operations officer of the Military Science Department at the Institute. Beverly Borland and Brian Moore were participants in a double ring ceremony in Lynn, Mass., on December 27. Brian is a lieutenant in the Air Force and is attending Flight Training School. On December 19, Boston, Mass., saw the marriage of Charlotte Peabody to Randy Paulling. Randy is now working for his master's degree in Naval Architecture and Engineering at the Institute. Loretta Malinsky and Harvey Roscoe were married in Bridgewater, Mass., on December 28. The couple is now living in San Diego, Calif., where Harvey is employed by Convair. The one engagement is that of Diana Vande Weghe to Gino Scalamandre. Gino is a lieutenant in the Quartermaster Corps now stationed in New Jersey.

Letters: Larry Garthe writes: "Jim Knowles was married the day before Thanksgiving at St. Marks in Brookline. The bride's name is Jackie De Bolt, a graduate of the University of Arizona. The whole gang from the house was there to kiss the bride. I'm now coaching the freshman basketball team. We've won 0 and lost 4 so far, but should do better as we all gain experience. They're a good bunch of boys, but it's amazing how Tech grinds them down." John McDonald: "I am now in the Navy on active duty at the Long Beach Naval Shipyard. I just finished the officer candidate school two weeks ago and am looking forward to my new duty on January 7 in sunny California."

Fred Fickenwirth reports: "The lovebug really bit me at Christmas time, so I am now engaged to Dorothie Miller, a native of Seattle and a graduate of the University of Washington. We plan to get married in July but no definite date has been set. I am still working at Boeing in the Production Planning Department. Bob Arbuckle is in the Cost Accounting Department." Al Kandel: "I'm leaving this Sunday (February 8) for Toledo to take the three-week Contract Pricing Course. I just spent some time in Schenectady at the American Locomotive Company, who should be making tanks, except that the workers are out on strike. I've also been off to the Cornell Aeronautical Laboratory near Buffalo."

Sam Mitchell reports of doings at Fort McClellan: "Well, I'm back again stuck here at McClellan for a while. Bob Damon and Fitzy Fitzgerald are also down here. Bill Chandler has been assigned to Atlanta Procurement, John Camp to the Chemical Corps Material Command in Baltimore, Neil Panzier and Dirk Plummer have just shoved off for Pine Bluff Arsenal (Arkansas). I have just completed the Atomic Defense Course and am now training the troops in the 216th Chemical Service Company on matters atomic." Skimmings from the Department of Army Special Orders: The Corps of Engineers completely dominate the picture this month. Lieutenant Chuck Carter was transferred from Camp Carson, Colo., to Fort Lewis, Wash., preparatory to overseas movement. Also heading for the same destination was Lieutenant Maurie Davidson, from Fort Leonard Wood, Mo. Lieutenant Bill Conkright was a bit more fortunate in that he was assigned to Camp Kilmer, N.J., from Camp Polk, La.

Bits and snatches: Rodger Vance, a member of our Class prior to his enlistment in the Air Force in 1950, was recently credited with the kill of his first MIG. Rodger is a first lieutenant and has flown 78 combat missions since last May 1.

Ye olde news well has run dry. See you all next month over a Technology Review. — STANLEY I. BUCHIN, *Secretary*, 150 Tryon Avenue, Englewood, N.J.

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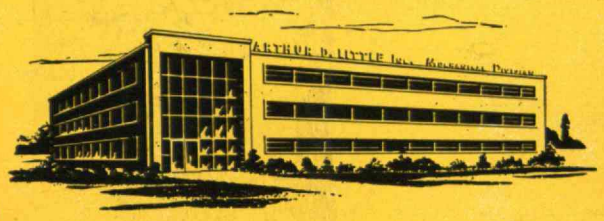

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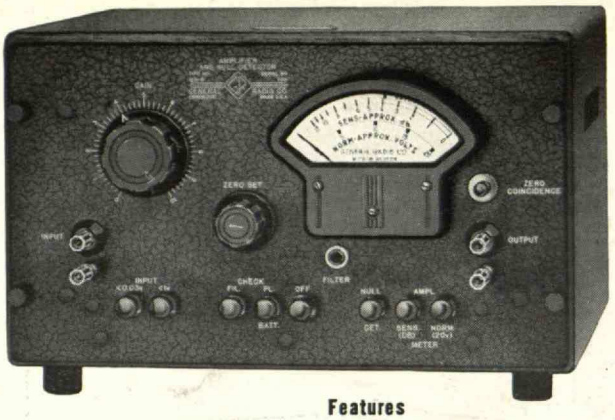

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